Gleanings in Bee Culture

Established 1873

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The Monthly Honey Market

U. S. GOVERNMENT REPORT

Information from Producing Areas (last half of April).

California Points: Southern California—The weather has been unsettled, with cloudy, windy days, fairly heavy rains toward the end of the period, and with several days of warm weather. The latter part of the month was not favorable to bees in orange areas, but was beneficial to the sage and buckwheat sections, where the added rainfall was needed. Scale hives are reported gaining 2 to 10 pounds a day in the Orange Belt. The main orange flow is said to be near its close, and some beekeepers are already moving to sage locations in the foothills, where black sage is beginning to yield. The quality of all honey being taken off is said to be above that of last year. Swarming has not been above normal and often has been below, though beekeepers fear that the recent cloudy weather may cause additional swarming. Pollen sources in the Orange Belt are limited except in the foothill sections, where ample mustard is available. A few rather small lots of new crop orange honey have already been sold and it will commence moving to market in volume within the next two weeks. Demand for honey reported fairly good, with alfalfa and eucalyptus generally lower but with other flavors of honey about steady. Sales by beekeepers in ton lots or more at Southern California delivery points, per case of 120 lbs.—sage-buckwheat, new crop light amber to extra light amber $5.00; mixed flowers, new crop extra light amber $4.40; extra light amber buckwheat $5.30; orange, old crop white $6.00; new crop, extra white to water white, few small lots $5.70-6.00. Beeswax, market generally steady at mostly 17-19c per lb., few best lots 20c per lb. delivered Los Angeles.

Imperial Valley.—Colonies are reported strong in young bees, with an abundance of brood and with plenty of honey and pollen where flax was available. Cantaloups yielded little nectar because of too much wind. Bees are now working on occasional arrow-weed plants. Occasional sales light amber to extra light amber alfalfa $4.25 per case of 120 pounds f.o.b., other sales $4.35 per case delivered Los Angeles.

Central California.—The weather was unsettled during the last half of April, with clear skies and moderate temperatures followed by cloudy weather and fairly heavy rains toward the end of the month. Chief interest centered in orange and sage districts where a good flow is under way. In the Lindsay-Porterville area strong colonies have gathered about 12 pounds a day of orange nectar, but the number of registered colonies is only half of those a year ago. The bees which were moved to the Sierra Mountains in Madera County are breeding up well and are storing a small surplus from wild lilac and yerba santa, and from red bud at lower elevations. Spikeweed is beginning to bloom and should yield well in favorable areas. The orange yield will probably be above average and the sage yield will probably be at least average, with the quality of both orange and sage honey reported good. Brood production has been curtailed by a serious swarming condition but swarming is now about over. Bees are also working on eucalyptus, locust, olives and several other sources. Alfalfa is not yet in bloom. Extracting of orange honey has started and within a few days the movement of orange honey should be substantial. As an indication of the exceptionally high quality of the 1940 crop honey some beekeepers are already offering to deliver fairly large lots of orange honey of water white grade. Reports from the sage area indicate that recent cool, rainy weather reduced the previous good flow and may materially cut short the output of sage honey. The rain, however, was beneficial to growing plants generally. The honey market was quiet except for the interest manifested in the new crop orange and sage honey, and little honey changed hands. Prices were generally unchanged to slightly weaker. Sales by beekeepers in ton lots or more, per lb., delivered Bay Cities—light amber to extra light amber alfalfa-bean mostly 4½c; amber to light amber mixed wild flowers 3½-4c; light amber eucalyptus 3½-3¾c, some 4c; delivered Interior Valley Points—light amber cotton, 3½c with cans returned.

Northern California—The warm weather of mid-April was followed by cool, cloudy weather and fairly heavy rains toward the close of the month. The abundant rainfall has placed honey plants in good condition and there has been an abundance of pollen from various wild flowers, especially mustard and filaree. Nectar has been gathered from oranges, honey locust, red maids and various minor sources, including willow, cotoneaster, Pyracantha, and apples. Package bees and queens are being shipped daily, though shippers advise that the prevailing rate of exchange is somewhat curtailing Canadian orders. Swarming is active. The market for honey has been quiet, with few lots moving, and prices about steady. Sales by beekeepers in ton lots or more, per lb., delivered Bay Cities—thistle, extra white amber to white 5-5¼c, light amber to extra light amber 4½-4¾c; light amber cherry 3½c; light amber mixed flowers 3½-4c, delivered Interior Valley points—extra light amber manzanita 3¼c; amber honeydew 3¼-3½c.

Beeswax: The market has been dull, with good wax reported bringing 20c per lb. delivered Bay Cities.

Pacific Northwest: West of Cascades—The weather has been unsettled, with considerable rain and wind in the Willamette Valley and along the Coastal areas, which has made it difficult for bees to work, and it has been necessary to do considerable feeding in order to keep bees from starving.

SUMMARY—Temperatures have been below normal throughout the entire period in the eastern part of the country, and below normal in much of the West during the latter week. Rainfall has been heavy in the eastern and south-central states, with beneficial rains also over large northwestern areas. Further, snow has fallen in parts of the Northeast. Weather conditions have been generally unfavorable for bee activities, and throughout the North bees have had little opportunity to take advantage of the early nectar flow. The Plains Area is the chief section in which bees appear to be up to normal in condition, although even here they have suffered from the backward spring. Winter losses will be even heavier than anticipated throughout the White Clover Belt. In the East Central States they are among the heaviest on

record, reaching 50 percent or more in many commercial yards. But bees have generally come through the winter in fairly good condition in the Mountain States and in much of the Plains Area. Interest in package bees and queens has been stimulated by the heavy winter losses in the North and many orders for packages have recently been placed. But with the season cold, rainy, and several weeks late in the Southeast, package bee men are finding it difficult to get out orders on time.

The honey crop in the California Orange Belt has been curtailed by wet weather, but the quality of the new orange honey is reported above that of last year, and already a few sales have been made. The cool weather has also adversely affected the orange and ti-ti flows in Florida. Crop prospects in Texas are uncertain because of the effect of the drouth of many months' duration prior to the recent abundant precipitation. Relatively little 1939 crop honey remains unsold except in a few States like Colorado, and prospects are that the carryover into the new season will be light. Wholesale and retail grocery sales have recently been running ahead of comparable 1939 totals. This is aiding food wholesalers to readjust their inventory position, which in many cases was top-heavy on the outbreak of the war in Europe last fall, a condition which may serve to explain why the wholesale demand for honey has been slow during recent months. Market levels are generally barely steady and in some cases are slightly weaker as beekeepers have been seeking to dispose of their remaining small lots of honey before new crop stock comes on the market.

Monthly Report of Honey Producers

Early in May we sent the following questions to honey producers: 1. What is your estimate revised to date, of the amount of last year's honey crop not yet sold in your locality? Give answer in per cent. 2. At what price has honey been sold or contracted for, if any, in large lats (carload or less) in your locality during the past month for (a) extracted honey, per pound? (b) Comb honey, Fancy and No. 1, per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) comb honey, Fancy and No. 1, per case. 4. What is the retail price to consumers in your locality of (a) extracted honey in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) comb honey, Fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair, or rapid. 6. What is the condition of the honey plants at this time in your locality, as compared with the average? Give answer in per cent. 7. What is the present condition of the colonies, as compared with normal, considering the number and age of the bees and the supply of stores? Give answer in per cent. 8. What is the per cent of winter and spring loss to date (if any) in your locality?

Date of report.			1.	2.		3.		4.		5.	6.	7.	8.
			1939	Large lots.		To Grocers.		To Consumers.			Cond. honey	Cond. of colo.	Winter loss.
May.	State.	Name.	carry-over.	Ex.	Comb.	Ex.	Cb.	Ex.	Comb.	Movement.	plants.		
4	S-Ala.	(J. C. Dickman)				.45		.55		Fair	60	80	
10	B. C.	(E. R. Freeman)	5							Fair	100	100	5
5	S-Calif.	(L. L. Andrews)	1					.47	.20	Fair	80	100	7
10	S-Calif.	(Geo. Larinan)	2					.50		Slow	50	70	5
5	SE-Colo.	(Otis E. Adcock)	25	.05		.40		.49	.18	Slow	75	100	5
7	E-Conn.	(Allen Latham)	8			.75	5.00	1.00	.28	Slow	90	90	5
7	S-Fla.	(C. C. Cook)		.04		.35		.50		Slow	125	100	10
11	C-Fla.	(Harry Hewitt)	0			.50		.65		Fair	100	100	0
6	SE-Ga.	(J. J. Wilder)	0	.05½		.50		.60		Fair	100	95	15
10	NC-Ills.	(A. L. Kildow)	0					.50	.18	Slow	90	75	18
5	S-Ills.	(Carl E. Killion)	15	.06½		.45		.63	.20	Fair	90	75	35
7	NW-Ind.	(E. S. Miller)	5			.50	3.00	.65	.15	Slow	75	85	10
10	W-Iowa	(E. G. Brown)	0							Rapid	90	100	20
7	S La.	(E. C. Davis)	5	.04½		.35		.50		Fair	100	100	5
10	N-Maine	(O. B. Griffin)	0				4.75	.25	.30	Slow	100	70	35
5	C-Md.	(S. G. Crocker)	0			.60		.75	.20	Slow	100	80	
12	N-Mich.	(Ira D. Bartlett)	2			.40	3.50	.50	.18	Slow	75	75	10
6	S-Mich.	(Floyd Markham)				.50		.75	.20	Fair	50	80	5
12	C-Mich.	(E. D. Townsend)	0								80		
6	E-Minn.	(Francis Jager)	0	.06		.25		.44			90	110	7
10	E-Minn.	(Floyd W. Ray)	15	.04½		.35		.47		Fair	90	100	6
10	W-Minn.	(B. L. Morehouse)	20			.35		.43		Slow	75	80	8
10	W-Nev.	(Geo. G. Schweis)						.45	.20	Slow	100	110	
6	NW-N. Y.	(Geo. B. Howe)	10			.45		.65	.20	Fair	90	100	5
5	C-N. Y.	(F. W. Lesser)	10	.06½		.48		.60		Fair	70	65	15
5	NW-N. C.	(C. S. Baumgarner)	0					.85	.25	Slow	110	100	10
6	SE-N. C.	(W. J. Martin)	0	.06½		.55		.75	.20	Fair	100	100	10
13	C-Ohio	(R. D. Hiatt)	15			.54	3.50	.60	.18	Slow	90	70	30
13	NC-Okla.	(C. F. Stiles)	5			.45		.63		Fair	80	85	20
7	W-Ore.	(H. A. Scullen)	10			.38		.54		Slow	100	75	10
5	C-Pa.	(Harry Beaver)	20	.05		.50		.60		Slow	80	75	20
5	SE-Pa.	(D. C. Gilham)	20			.70	4.25	1.00	.25	Fair	80	80	20
5	W-S. C.	(E. S. Prevost)	0					.17		Fair	80	80	
5	SE-S. D.	(J. F. Norgren)	15			.40	2.80	.49	.15	Slow	85	90	20
12	E-Tenn.	(W. L. Walling)	0					1.00		Slow	100	90	3
6	C-Texas	(T. A. Bowden)	2			.45		.55		Fair	100	110	3
6	S-Texas	(J. N. Mayes)	10	.04		.23		.30		Slow	90	100	8
10	S-Texas	(H. B. Parks)	0			.45		.55		Fair	60	90	2
8	N-Utah	(W. H. Hendricks)	16			.35		.47		Fair	100	100	10
11	S-Va.	(T. C. Asher)	0			.50	4.00	.70	.20	Slow	90	90	10
10	SE-Wash.	(Ryon R. Isbell)			3.45	.35		.49	.15	Fair	100	80	4
6	N-W. Va.	(W. C. Griffith)	0					.50	.19	Slow	90	50	8
4	SE-Wisc.	(N. E. France)	35	.05		.30		.45	.14	Fair	60	75	18
5	N-Wyo.	(Earl C. Reed)	20			.40		.49		Slow	75	90	15

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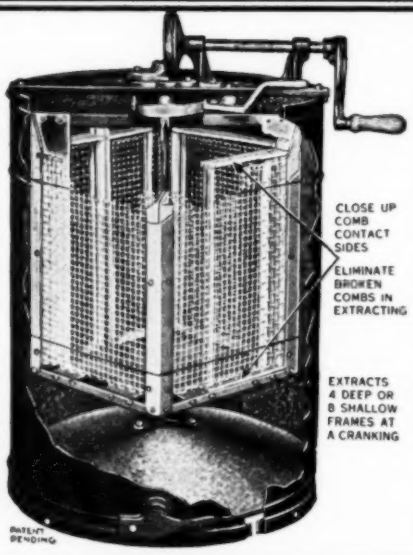
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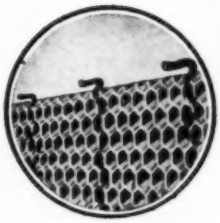

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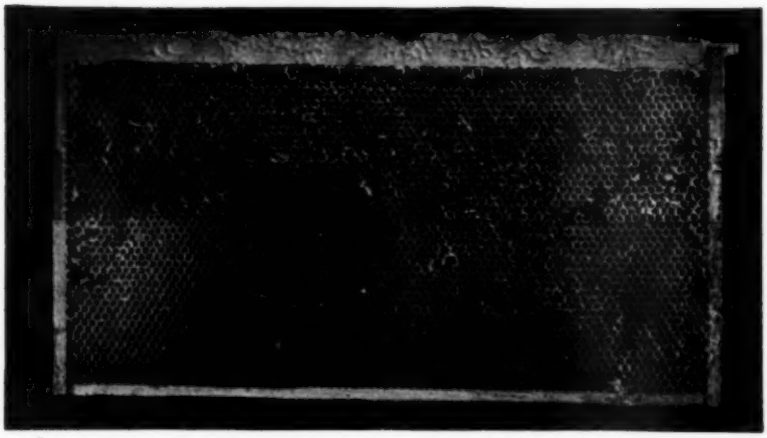
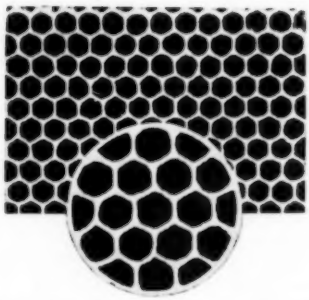


That Do So Much



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Vol. 68
No. 6

Gleanings in Bee Culture

June
1940

Supering for the Flow

By C. B. Gooderham
Dominion Apiarist, Ottawa, Canada

[Note.—This article was an address given at the Ontario Beekeepers' Association meeting in Toronto last November.—Ed.]

In these days of keen competition and low prices the beekeeper must explore every idea that offers any possibility of reducing the production costs of his product. As time and labor expended in the manipulation of bees must be included in the costs of production, any appreciable saving that can be made in these two factors, must in the long run have the desired effect; especially if the saving permits of any extension in operations.

All beekeepers, large or small, I think will admit that the time and labor involved in the supering of colonies for the honey crop is one of the most expensive items in production costs.

With this thought in mind an experiment was started at Ottawa in 1932 to compare two other methods of supering with that then in general use.

During the first two years of the experiment, 1932-'33, twenty-four colonies of average strength and all of as nearly equal strength and condition as possible were selected. These colonies were divided into four groups of six each and supered as follows:

Group 1—The orthodox method of placing each newly added super immediately above the brood chamber and below the supers already present.

Group 2—Placing each newly added super on top of the colony above those already present.

Group 3—Each newly added super was placed immediately below the brood chamber. In this way the first super was always next to the floorboard and the brood chamber always on top of the colony.

Group 4—The colonies in this group were supered in the same manner as in Group 2, the only difference being that a super of combs was placed beneath the brood chamber.

The average crops produced by these groups for the two years were as shown in Table 1, below:

It will be noted that for both years the colonies in Group 2 gave the highest average crop. Group 4 came second, followed by Groups 1 and 3, respectively.

Group 3 was discarded from the experiment at the end of the second year because of its comparatively poor showing, and also because it was found to be inconvenient having the brood nest on top of the colony. Group 4 was also discarded because it was found unnecessary to have the extra super beneath the brood chamber—it was neither occupied with brood nor honey at any time.

For 1934 to 1938, Groups 1 and 2 contained 12 colonies each, while in 1939 there were 18 colonies in each group. The results for these years are shown in Table II, next page.

Table I

Year	Group 1	Group 2	Group 3	Group 4
	Aver. Crop	Aver. Crop	Aver. Crop	Aver. Crop
1932	56.3 lbs.	70.5 lbs.	38.0 lbs.	61.0 lbs.
1933	134.8 lbs.	162.7 lbs.	103.6 lbs.	145.9 lbs.

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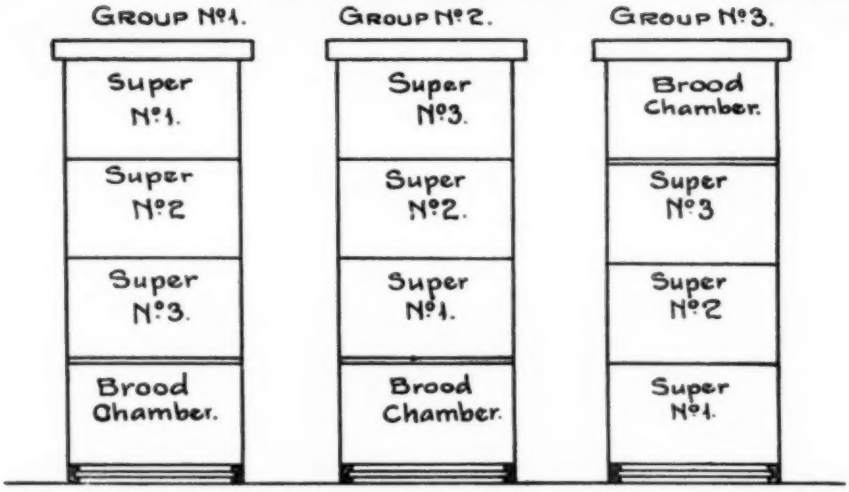


This illustrates different methods of supering.

Table II

Year	No. Colonies in group	Group 1 Aver. Crop	Group 2 Aver. Crop	Remarks
1934	11	172.4 lbs.	162.5 lbs.	No swarming
1935	12	88.5 lbs.	82.8 lbs.	Three swarms from each group
1936	12	118.8 lbs.	132.3 lbs.	One swarm Group 1
1937	11-12	74.7 lbs.	69.5 lbs.	One swarm Group 2 One colony Group 1 destroyed AFB
1938	12	247.5 lbs.	249.8 lbs.	One swarm each group
1939	18	144.2 lbs.	143.3 lbs.	One swarm Group 1

The above table shows that Group 1 gave the highest average crop for four years out of the six, while Group 2 led for two years. Glancing back at Table I, however, it will be seen that Group 2 led for 1932-'33, thus for the total period of eight years each group had four years to its credit.

During the period, eleven of the colonies swarmed; six from Group 1 and five from Group II.

Covering the whole period of eight years, 177 colonies were tested in the two groups and Table III shows total production and averages.

Table III shows that for the eight-year period the colonies supered on top produced an average of 136.8 pounds against 135.4 pounds for those supered in the orthodox manner. This difference of 1.4 pounds is insignificant other than to show that at least the crop was not reduced by the changed method of supering.

The objection to the method as raised by Mr. Hubbard of Grenfell, Sask., in the September, 1939, issue of the Canadian Bee Journal, was not met with in the experiment, probably for the reasons given by

(Continued on page 358)

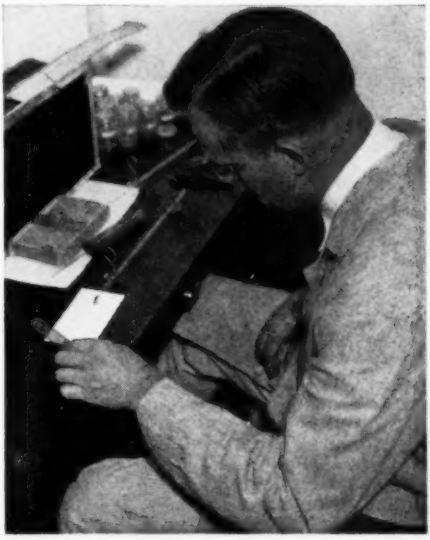
Table III

	No. Colo.	Group I		Group II	
Year	in Group	Total Production	Average	Total Production	Average
1932	6	338.0 lbs.	56.3 lbs.	423.0 lbs.	70.5 lbs.
1933	6	808.8 lbs.	134.8 lbs.	976.3 lbs.	162.7 lbs.
1934	11	1896.5 lbs.	172.4 lbs.	1787.0 lbs.	162.5 lbs.
1935	12	1062.5 lbs.	88.5 lbs.	993.5 lbs.	82.8 lbs.
1936	12	1426.0 lbs.	118.8 lbs.	1587.0 lbs.	132.3 lbs.
1937	11-12	822.0 lbs.	74.7 lbs.	834.0 lbs.	69.5 lbs.
1938	12	2969.5 lbs.	247.5 lbs.	2997.0 lbs.	249.8 lbs.
1939	18	2595.0 lbs.	144.2 lbs.	2579.0 lbs.	143.3 lbs.
8 yrs.	177	11,918.3 lbs.	135.4 lbs.	12,176.8 lbs.	136.8 lbs.

Federal B-Men Solve Apiary Mysteries

By G. H. Dacy

If bees but bred like live stock it would be comparatively simple in a few years to correct this or that defect in various breeds and strains. A purebred sire campaign under such circumstances would effect marked changes in a relatively short time were it adopted and scrubs and grades condemned to discard. Unfortunately for apiculture in general and bee-breeders in particular these billion dollar mites of the insect world are extremely choosey about how, when, and where they mate and with whom. Until artificial insemination bobbed up as a possible and practical solution of the enigma of how to produce better honeybees under some satisfactory style of control bee improvement was pretty well stalemated by a "bridge out" sign on the main way to more satisfactory multiplication and progeny production.



Feeding different amounts and kinds of arsenic to honeybees in determining the lethal dose. This research revealed that 0.5 micrograms of finely divided calcium arsenate will kill an adult bee.

Artificial Insemination of Queen Bees

Artificial insemination even today over 15 years after the pioneer experimenting in this country along such controlled lines is still far from being out of the research woods, or so to say, experimental stages. A couple of months ago when your writer stopped at the new laboratory of the Division of Bee Culture of the U. S. Department of Agriculture, Beltsville, Maryland, to have a chat with Uncle Sam's B-men the above statement was confirmed. The fact is another stop gap for the leading bee-breeders who had hoped that the federal experts would about this time publicize the process so that private individuals might have a try at some of the latest innovations. It now appears that some years yet will pass before any but highly trained apiculturists will be qualified to readjust the research means, measures, and methods of artificial insemination to practical apiary scale.

Small wonder that bee-breeders wish if possible to capitalize as much as possible on this instrumentality of the experimental laboratory. Today in the United States if we estimate the average value of our queen bees at between 50c and $1.00 apiece—a low valuation—the replacement of these "hive headers" would represent a monetary investment of approximately $3,000,000. Beekeepers well know that better queens mean better worker bees; better workers signify more efficient honey production and more satisfactory pollination of both fruit and field crops. Then there's that matter of beeswax; it doesn't seem right when our beekeeping industry needs that extra revenue that we should be importing beeswax from foreign countries.

In certain sections of the country we need new strains of honeybees that will fly at lower temperatures than the ordinary workers of today. This is especially true in areas where bees are used chiefly as pollenizing agents. If modern bee breeding could but produce a better bee than our present best with the long tongue of the Caucasian breed which could penetrate to nectar sources now denied the average worker, beekeepers surely would sing its praises. If we had a gentler bee than the average Italian which still rates as America's

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Prof. F. B. Meacham, who determined that honeybees won't mate in a large wire cage, demonstrates his favorite trick—licking a frame of bees with his tongue.

standout commercial bee that would be another forward step for apiculture. We could well use bees which showed lessened swarming tendency and which displayed greater resistance to disease such as American and European foulbrood. We need nectar scouts which can fly farther than existent limits and can transport heavier return loads of freight including nectar, pollen, and propolis.

Long-tongued Bees Wanted

The Caucasian breed is gifted with exceptionally long tongues, excelling the Italian in this respect; the Caucasians with an average tongue of 6.9 mm. and with some of the workers having tongues as long as 7 mm. can penetrate deeper into the corollary tubes of red clover plants and harvest more pollen. The Caucasian is gentler than the Italian—except cross-bred Caucasians which sometimes are extremely ugly and mean. On the other hand, the tendency of the Caucasians to build pillars of propolis and plug up the hive entrance is extremely objectionable. Uncle Sam's specialists still recommend the Italian breed as tops in this country; it is our best breed for all-around apiary use; it is readily possible to obtain purer strains of Italians. The Carniolan breed is gentler than the Italian and caps her honey tighter than either the Italian or Caucasian but is not as popular because of the breed tendency toward excessive swarming.

Beemen generally have accepted the theory that the queen bees and drones will breed only on wing and when accorded complete liberty. Every once in so often, however, somebody comes to bat with the belief that bees may be bred naturally in confinement in greenhouses or in large wire enclosures. The latest claims to that effect have emanated from California and Australian investigators. Their contentions have been so emphatic that Uncle Sam decided to check up on the amazing results. The national Division of Bee Culture arranged with Professor F. B. Meacham of North Carolina State University to spend the summers of 1937-8 at Beltsville, Maryland, where he could determine once and for all time whether there was any authenticity in these beliefs that bees would mate "in prison". The "prison" took the form of a house made of copper screen 20 feet square in floor surface and 20 feet high. The top of the wire house was covered with cheesecloth which extended down about 3 feet on each side. That screen reduced the bright light which otherwise would attract the bees to the top of the cage.

Queens Did Not Mate in Confinement

During July and August of the two successive summers Professor Meacham spied on the daily life of several colonies of Italian honeybees including many hundred drones and 10 virgin queens, the occupants of that research dwelling. The life of the bees was entirely normal in all respects except that their flights were restricted to the borders of the large wire pen. Even under these practically ideal conditions the mortality among the confined bees was high. Not a single case of mating of the queens and drones occurred during the total 4 months residence of the experimental bees in the wire gaol was observed.* On the basis of these federally fostered tests the favorable results reported from California and Australia seemingly must be classified as "phony".

Researchers of the U. S. Department of Agriculture seeking new uses for surplus cotton have for a year or more now been testing that material as insulation for colonies of

*Some forty years ago large mating tents were erected in South Carolina and again in Pennsylvania. The results were negative and unsatisfactory.—Ed.

bees during cold weather. The cotton made up in quilted form is placed as a protective cover over the colony instead of the tarred paper, leaves, and sawdust which previously have been used as protective mantles against falling thermometers. After the cotton is in place a waterproof tarpaulin is drawn compactly over each hive. The cost of one of these outfits is $1.25 per colony. If it will be serviceable for 8 to 10 years beekeepers can well afford such cold weather "caps" and "ear-muffs" for their bees. However, if the covers are much less durable their initial cost will be prohibitive; the pay-as-you-go beeman will not be able to afford them.

How much deadly arsenic in spray form is needed to kill a fully developed honeybee?

In 1926 Uncle Sam engaged in some preliminary tests which showed that 5 milligrams of lead arsenate and Paris green was the lethal dose of arsenic required to kill a worker-bee weighing 90 milligrams. That figure was generally accepted until 1938 when additional research uncovered that as small an amount of finely divided calcium arsenate as .5 of a milligram would knock the average nectar scout kicking cold, never again to rise.

Saving Bees from Spray Poisoning

Billions of bees have been killed during the last few years and their deaths in various bee pastures and yards have been attributed to mysterious unknown causes; actually these insects departed this life due to arsenic poisoning. They had obtained lethal doses of the deadly chemical while harvesting nectar—from fruit and vegetable and crop blossoms which had either been sprayed directly with arsenicals of which had become contaminated by drifting spray from neighboring fields and orchards. To put the actual "Q. E. D." on their beliefs the apiculturists of the Federal Division of Bee Culture using honeybees as the guinea pigs of apiary science have definitely determined the amounts of different kinds and forms of arsenic necessary to kill full-grown worker bees. The test bees marked conclusively for identification were given varying amounts and kinds of arsenic in nectar-like solutions. After being dosed the treated bees were placed in an incubator where temperature and humidity conditions approximated those of

Surplus cotton made into pads and covered with tarpaulin is being tested by Uncle Sam's B-men as winter protection.

Preparing poison for killing worker bee bodyguards of imported queens in order to dissect them for signs of acarine disease in the breathing tubes.

All imported queens and their retinue are examined for signs of acarine disease.

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the average honeycomb. Tab was kept on how long it took the various poisons to kill the different bees. The results emphasize that the average honey scout in harvesting a single load of nectar may take up 30 times more than enough arsenic from sprayed vegetation to kill that insect.

What is to be done about this serious situation? Must beekeepers annually sacrifice terrifically large numbers of bees because orchardists insist on battling the codling moth in orchards at bloom-time when bees are most abundant among the fruit trees?

The Government laboratory experts have been testing out organic compounds as substitutes for arsenic in spray mixtures which will kill the codling moth and other fruit and plant pests but which are entirely innocuous to the busy bees. One organic compound has been found which does exactly this, and does it with remarkable expedition and efficiency under laboratory conditions. The evidences are that it will work as well under field conditions as it does under theoretical conditions. It will be tested out in large eastern orchards which are pollinated annually by honeybees next spring; if it proves as successful under commercial conditions as is expected it will replace arsenicals in the potential spray programs of many American orchardists who are anxious to cooperate with their friends and neighbors, the local beekeepers. This new organic material is called phenothiazine; you will surely hear more about it in the not-distant future. See page 370.

Vigilance at Beltsville in seeking signs of acarine disease among imported queens is keen and insistent as formerly. Not a single one of the mites has been found on any of the imported queens nor their attendant worker bees since an act of Congress in 1922 established that essential inspection and "Ellis Island service" for queens. Once this formidable pest which locates in the breathing tubes of the bees almost stamped out beekeeping in England because of the enormous economic losses which it caused. During the last fiscal year 186 queens were subjected to this service, each imported queen being accompanied by a retinue of from 25 to 100 worker bees. The queens themselves are not examined unless the disease is found among the bees in their retinue. The worker bees have to be killed for examination; they are replaced with other healthy workers provided by the Division of Bee Culture when the queens are passed and forwarded to the breeders who have imported them from abroad.

Miami, Florida.

SUPERING FOR THE FLOW

(Continued from page 354)

Mr. M. J. Deyell in the November issue of the same journal.

Top Supering Saves a Tremendous Amount of Labor and Time

The main significance of the experiment lies in the difference of time and labor required for supering the two groups. While the actual time required was not recorded, I think everyone will agree that it is much faster to place a super on top of the colony than it is to first lift off one or more supers, place the new super, and then to lift back all those first removed.

In a very large apiary there is no doubt that a tremendous amount of time and labor can be saved by top supering, and without much danger of reducing the crop possibilities.

It may be remembered that in my paper last year it was suggested that today there is a tendency towards mass production, and with it a development of more efficient methods of apiary management, which in turn act as a deterrent to natural swarming. This statement led to the suggestion that changing conditions of apiary management might permit the beekeeper to ignore any natural swarming that might take place during the flow, provided the system of management followed, reduces the tendency towards swarming to a minimum, and at the same time enables him to expand his business, the idea being to spend less time on the examination of colonies and use that time in keeping more colonies. If that is true, then the system of top supering fits into such a scheme. If, however, the system of management requires a periodical examination of the brood nest, then there is no advantage to be gained by placing the supers on top.

Experiences in Producing Section Comb Honey

By M. J. Deyell
Manager of The A. I. Root Co. Apiaries

These experiences occurred during 1938 in connection with a series of experiments we began that year, to endeavor to find answers to questions on comb honey production.

Here are the questions:

(1) Will colonies developed from packages, run for section comb honey, swarm the same season to any great extent?

(2) Is top supering satisfactory for the production of section comb honey?

(3) Is it possible and profitable to produce section comb honey over colonies in double-brood chambers?

I should say at the outset that the experiments conducted were not strictly scientific nor on a par with those carried on at Government Field Stations, but to me, at least, the results were significant. We tried to let the bees give us the answers to questions. Seventy-five colonies were used in the experiments conducted in western Ohio.

Question (1)—Swarming

Some beekeepers assume that colonies started from packages will not swarm the same season. Experienced beekeepers know that such colonies, under certain conditions, may swarm in comb honey production.

The colonies used in this experiment, developed from packages were operated in single-story brood chambers. The main honey flow started earlier than usual that year,—and with a bang, from yellow sweet clover and alsike.

We inspected the brood chambers regularly each week after the flow began. On the inspection after the first supers were given we found about 25% of the colonies preparing to swarm. Some had advanced larvae in queen cells and others had eggs in queen-cell cups.

Swarm Control Manipulations

To prevent swarms from going to the woods we had to do something drastic, so we decided on the following program: We carefully destroyed all queen cells. In order to find all "eggs in cups" it was necessary to shake most of the bees off each comb of brood.

In a small percentage of colonies the removal of queen cells with eggs on the first inspection stopped swarming preparations. In the majority of colonies it was necessary to destroy "eggs in cups" on three consecutive inspections before these colonies would give up swarming.

Where colonies persisted in making preparations for swarming, also where colonies had larvae in cells, the following swarm control measure, by manipulation of combs, was used.

A Modification of Demaree Plan

This manipulation necessitated using an extra hive body with frames containing full sheets of foundation for each colony treated. All queen cells were destroyed. Five frames of foundation were removed from the center of the extra hive body. Five combs of brood with the bees shaken off (to make sure the queen was left below) were taken out of the brood chamber and put into the center of the extra hive body which was placed over the comb honey supers, on the inner cover with the center block removed, so that the bees from below could enter. The five remaining combs in the brood chamber below were spread apart and alternated with the remaining five frames with full sheets of foundation previously removed from the extra hive body.

In the majority of cases this raising of five combs of brood and inserting frames of foundation between the remaining combs of brood in the lower brood chamber checked swarming. It was necessary, however, in the case of three or four colonies to repeat this treatment to stop swarming. This manipulation, while it took a little time, stopped swarming in the majority of cases and held the colonies together. The extra hive body on top was removed soon after swarming was given up and when most of the brood had emerged. The bees were shaken off the combs at the hive entrance and the super was given to a colony run for extracted honey. It was necessary to destroy cells started in the top extra hive

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body, on the ninth day, to prevent virgins emerging.

The big problem in comb honey production is swarming. Some day, (in the near future, I hope) there will be a technique developed whereby swarming can be controlled and perhaps prevented. The late George S. Demuth, one of the world's best comb honey producers, worked on this problem for years. I suggest that you turn back to page 291 of the May, 1939, Gleanings to the article "Proposed Forced Supersedure Method" and read it carefully.

Question (2)—Top Supering

The old and so-called orthodox method of placing the fresh super on the bottom of the pile, below filled and partly filled supers, and juggling the supers around in order to get them properly filled and capped, is rather complicated, to say the least. Top supering is much simpler. We found that strong colonies, during a good honey flow, would occupy supers placed on top as they were needed.

The big advantage in top supering for comb honey, as I see it, is that there are fewer partly filled sections at the close of the flow than when the old method of supering is used. When supers are placed on top they are occupied, if and when needed.

It is, of course, necessary to remove supers as soon as the sections are capped over, to avoid travel staining. During a rapid flow it is necessary to examine supers at least once a week to see if any need to be removed, also to determine if more are needed.

In comb-honey production, top supering may not reduce labor costs to any great extent, because the filled supers at the bottoms of the piles have to be removed periodically and promptly to avoid travel stained sections. However, in the opinion of the writer, top supering does result in better filled and capped sections, fewer partly-filled sections, and, (believe it or not) less swarming.

Question (3)

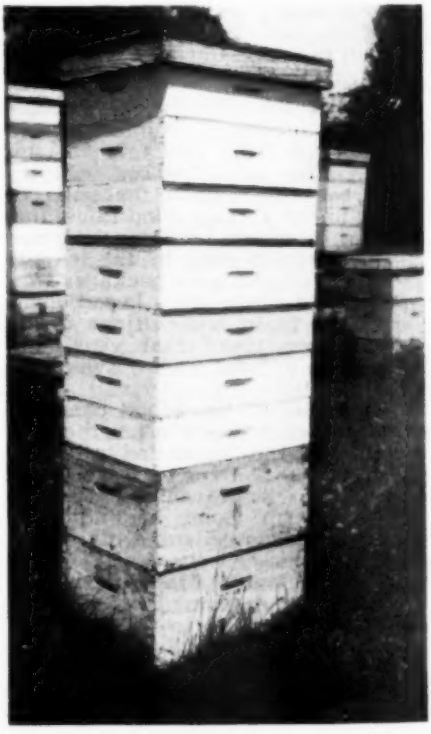
During the past seven or eight years we have been producing extracted honey over double brood-chamber colonies. Our experience in 1938 led us to believe that it may be entirely possible, with the right management and favorable conditions, to produce comb honey over double brood chambers.

Usually it is necessary to operate bees in double brood chambers prior to the flow in order to produce very populous colonies. The continuance of this double brood-chamber method throughout the season obviates the necessity of reducing a two-story colony down to one story, which manipulation involves the problem of disposing of the extra story when comb supers are given. It simplifies labor and management. Our best comb honey colony occupied a double brood-chamber (two 10-frame standard bodies) and made no attempt to swarm.

Advantages of Double Brood Chamber

It is obvious that a queen in a double brood-chamber hive (provided the brood chambers used are not too small) has more space for egg-laying than she would have in a single brood chamber. As congestion within the hive is said to be the prime cause of swarming, congestion in the double brood chamber would naturally be relieved. We found that at the beginning of the main flow the

(Continued on page 405)



Colony in double brood-chamber hive produced good crop of comb honey in 1938.

Quick, Easy, and Good

By Mrs. Benj. Nielsen

Festive and delicious is honey chocolate pudding.

Delicious, Wholesome Honey Recipes Add New Life to Summer Menus

All paths lead to outdoor activities these lovely sunny days; the days as yet are not too hot, so we are still enthusiastic about working in the garden and with our flowers. The housework may go undone, or get the proverbial "lick and a promise". But no matter how many outdoor interests the cook may have, inner man must be satisfied. Appetites are funny things when you stop to think about it; they may lag at times 'tis true, but do they ever take a vacation—a real vacation? Never! And alas! the skimpy "lick and a promise" technique we sometimes appease our consciences with in regard to the housework just won't work—at least not for long. The man of the house is sure to growl, aided and abetted by a lusty young chorus. So it is up to mother to scout around for simple, easy yet satisfying recipes that can be prepared ahead of time and tucked away; or recipes that do not demand too much time when we come in from the garden, or other activities, tired and crowded for time.

At our house even if the thermometer stands at 99 degrees in the shade, we have to have muffins once in a while. Here's a grand aid in preparation: In the cool of the morning, or other leisure time, measure and sift the dry ingredients called for in your favorite recipe. Place them in a jar having a screw top, and be sure to fasten the lid tightly. Write your recipe neatly and paste, or snap it on your jar with a rubber band. You can tell at a glance the amount of shortening, honey and liquid to add. By this method ingredients go together in a jiffy at the last minute. Maybe you'll have muffins for breakfast more often, too—they'll bake while you squeeze the orange juice and prepare other foods.

When there is a luscious honey chocolate tapioca pudding waiting in the refrigerator, the cook never need worry about pleasing the family, or apologizing when guests drop in. Festive looking—and it tastes every bit as good as it looks. The honey-treated whipped cream stands the waiting beautifully, too. For variety we sometimes like to add a bit of peppermint flavoring—not too much, mind you, just a few drops—it gives a delightfully cool pleasing flavor in combination with the honey.

Honey Chocolate Tapioca

Four cups milk, 2 squares unsweetened chocolate, ½ to ¾ cup honey, ¼ cup quick-cooking tapioca, ¼ teaspoon salt, 2 egg yolks, 1 teaspoon vanilla and 2 egg whites.

Scald the milk in the top part of a double-boiler; add grated chocolate and beat with a rotary beater until chocolate and milk are well blended. Stirring constantly add the honey, tapioca, and salt. Beat the egg yolks until thick and lemon-colored. Add a little of the hot tapioca mixture to the egg yolks, mix well then add to mixture in double-boiler. Continue cooking, stirring frequently, until tapioca is clear, 5 to 7 minutes. Remove from fire; add vanilla. Beat egg whites until stiff, but not dry. Fold gently but thoroughly into the chocolate mixture. Pour into dish and allow to cool. Soften ⅛ teaspoon of Knox Gelatine in 1 tablespoon milk; melt over hot water; cool. Whip ½ cup cream, add gelatine, beating

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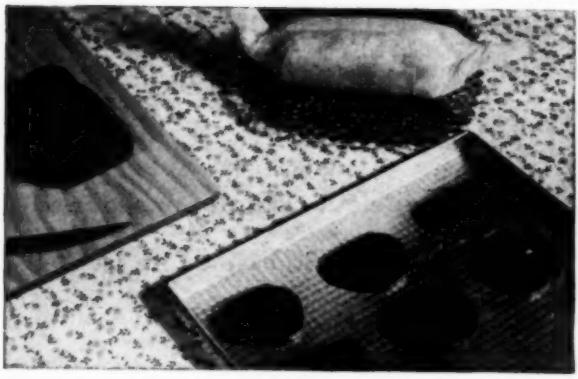


Cookies in a jiffy when this easy-to-make honey dough awaits in the refrigerator.

constantly. Then beat in 3 tablespoons of honey. Pile lightly on cooled tapioca. Chill until serving time.

Honey Cream Pie

Two tablespoons butter, ½ cup honey, ¼ teaspoon salt, 4 tablespoons cornstarch, 2 egg yolks, 2 cups milk, scalded, grated rind 1 lemon, 2 egg whites, 3 tablespoons honey and 3 tablespoons cooked mashed apricots. Combine butter, honey, salt, cornstarch and egg yolks. Add the scalded milk slowly, stirring constantly. Cook over hot water until thick and smooth. Remove from fire; add grated lemon rind. Pour into a baked pastry shell. Beat the egg whites until stiff but not dry; then beat in the honey. Fold in the mashed apricots. Pile lightly on pie. Brown lightly in a slow oven, 325 degrees F., for about 20 minutes.

If you do not wish to heat the oven, pour the mixture into a graham cracker crust made by rolling 18 honey-flavored graham crackers very fine, working in ⅓ cup softened butter and 2 tablespoons of honey. Pat the mixture firmly into a pie plate and chill before adding the filling. Whipped cream may be used in place of the egg whites; sweeten with honey, of course, and fold in the mashed apricots.

Golden Glow Salad

One tablespoon Knox Gelatine, ¼ cup cold water, ⅓ cup honey, 1 cup orange juice, 3 tablespoons lemon juice, ¼ teaspoon salt, ⅓ cup grated raw carrots and ½ cup crushed pineapple, well drained.

Soften the gelatine in the cold water and place over hot water until dissolved. Add honey; blend well; cool. Add remaining ingredients and pour into one large mold or individual ones. Chill.

Honey Crumb Cakes

One and ¾ cups sifted flour, 2 teaspoons baking powder, ½ teaspoon salt, ½ cup shortening, 2 eggs, 1 cup honey, ½ cup milk, and 1 teaspoon vanilla. For the crumb topping use: three tablespoons flour, 1 tablespoon shortening, (Spry), and 2 tablespoons brown sugar.

Sift the flour; measure and sift with baking powder and salt. Cut in shortening until mixture is as fine as meal. Combine unbeaten eggs, honey, milk and vanilla. Beat with rotary beater. Add half of the liquid to the dry ingredients, beating until smooth; add remaining liquid and beat well. Pour batter into well greased muffin tins or paper baking cups. Combine flour, Spry, and brown sugar, working until well mixed. Sprinkle crumbs over tops of cakes. Bake in hot oven, 400 degrees F., about 25 minutes.

Green Apple Upside-Down Cake

One-fourth cup butter, ½ teaspoon cinnamon, ½ teaspoon nutmeg, ½ teaspoon salt, ¾ cup honey, 1 egg, unbeaten, 1¼ cups sifted flour, 1½ teaspoons baking powder, ⅓ cup milk, 2 cups sliced green apples, 6 tablespoons butter and ⅔ cup honey.

Combine butter, spices, and salt. Gradually add honey, creaming until light and fluffy. Add unbeaten egg and beat thoroughly. Sift flour, measure and resift with baking powder. Add alternately with milk to the creamed mixture. Arrange the sliced apples in a greased pan, about 8x8 inches. Melt the butter, add honey and mix thoroughly. Pour over apples. Spread batter over all. Bake in a moderate oven, 350 degrees F., for about 1 hour. Serve with

Honey Lemon Sauce

One tablespoon cornstarch, ⅛ teaspoon salt, ¾ cup boiling water, ½

cup honey, 2 tablespoons butter, 2 tablespoons lemon juice and grated rind of ½ lemon.

Combine cornstarch and salt. Stirring constantly, add the boiling water to which the honey has been added. Boil gently for about 5 minutes. Remove from fire, add butter, lemon juice and grated rind.

Honey Coffee Cake

Two and ½ cups sifted flour, 3¾ teaspoons baking powder, 1 teaspoon salt, 1 teaspoon cinnamon, ⅓ cup shortening, ½ cup honey, 1 egg, unbeaten, ½ cup raisins, ⅓ cup milk, ¼ cup peanut butter and ¼ cup honey.

Sift the flour; measure; sift again with baking powder, salt and cinnamon. Cream shortening; add honey gradually, creaming until light and fluffy. Add the unbeaten egg, and beat well; add raisins. Stir in flour mixture alternately with the milk, beating thoroughly after each addition. Pour into well-greased baking pan. Spread batter with peanut butter and honey which have been creamed together. Bake in a hot oven, 400 degrees F., for about 20 minutes.

Honey Banana Bran Muffins

One cup sifted flour, ½ teaspoon salt, ¾ teaspoon soda, 2 tablespoons butter, ¼ cup honey, 1 egg, 1 cup Kellogg's All-Bran, 2 tablespoons sour milk and 2 cups thinly sliced banana.

Sift flour; measure; resift with salt and soda. Cream the butter and honey until light and fluffy. Add well beaten egg, bran, and milk. Add thinly sliced banana and mix well. Stir into dry ingredients, mixing only enough to dampen all of the flour. Fill well-greased muffin pans ⅔ full and bake in a moderate oven, 375 degrees F., 30 to 35 minutes.

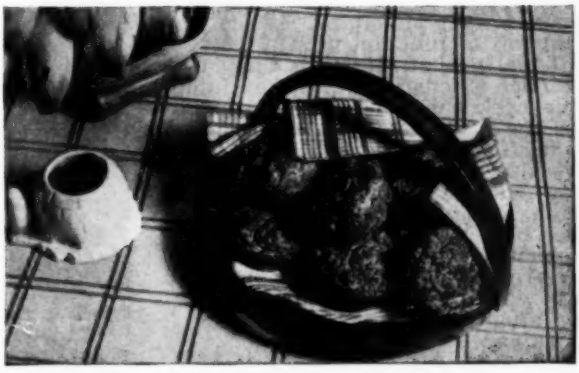
These yummy honey refrigerator cookies have quite a time deciding just what to be—soft or hard or crisp. The dough is quite soft when first mixed, hard when chilled, puffs up considerably in baking and the cookies are very soft when removed from the oven. However, they quickly become hard and crisp. Watch them carefully and remove them from the pans while the pans are still warm. If left until the pans are cold the cookies are so crisp they break apart in removing. Left in the open, or stored in a jar, they become soft again overnight. Crisp or soft they are good eating!

Honey Refrigerator Cookies

Two and ¼ cups sifted flour, 2 teaspoons soda, 1½ teaspoons ginger, 1 teaspoon salt, 1 teaspoon baking powder, 1 cup honey, ½ cup butter, 1 square unsweetened chocolate and 1 teaspoon vanilla.

Sift flour once; measure; add soda, ginger, salt and baking powder; sift again. Heat the honey slowly and carefully to prevent scorching, remove from fire; add the butter, grated chocolate, and vanilla. Stir until the butter and chocolate are melted. Then add the flour mixture gradually, mixing well. (The dough will be rather soft, but do not add more flour. It will be necessary to chill the dough slightly before attempting to shape it into rolls.) Chill slightly; then shape into rolls and store in refrigerator overnight. Cut in thin slices, place well apart on greased cookie sheets and bake in a moderate oven, 325 to 350 degrees F., for about 10 minutes. Unused portion of roll may be wrapped in waxed paper and returned to refrigerator until needed.

Aurora, Nebr.



Honey banana bran muffins are delightfully light and flavorsome.

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From the Field of Experience

SUPERSEDURE SWARMS

By E. S. Miller

Swarming, sometimes, is the result of attempts of the colony to supersede the queen. Supersedure swarms usually are due to failing queens and often leave the hive when there is no need for additional room. Such swarming may occur with or without the previous disappearance of the queen. With the loss of the queen, cells are started and swarming is apt to follow when the virgin queens emerge if weather and other conditions are favorable. In cases where queen cells are built while the old queen is present, swarming likewise may take place, especially if more than one cell is started. The queen may disappear at this time or later, leaving the colony queenless or to be headed by a second or third queen emerging later.

Supersedure swarms usually are the result of poor beekeeping practice, that of tolerating old and worn-out queens or of using inferior queens reared under unfavorable weather conditions. It is true that young and supposedly good queens may sometimes fail, but if brood is examined with reasonable frequency and all slow queens eliminated, supersedure swarms become a matter of minor importance.

Obviously the remedy is to requeen all colonies at least every second year and to keep watch of all that show evidence of failure. All weak colonies should be investigated and all slow queens replaced. It is a good plan to keep a number of nuclei coming on during the summer in order to have on hand young queens with which to replace any that fail to function properly.

I realize that there are many who practice extensive rather than intensive beekeeping, who seldom examine the brood and who are satisfied to take losses along with gains. There are also those with only a few colonies who practice let-alone "methods", resulting in swarms rather than honey. To these keepers of bees, supersedure swarms may be and often are the cause of a considerable loss which might be avoided by giving attention to colony conditions.

Valparaiso, Indiana.

SELLING HONEY FROM HOUSE TO HOUSE

By Alberta Brown

I have been selling honey from door to door on an experimental basis for the past six months and find that between four and five dollars a day profit can be made. We live off the main highway and have a number of beekeepers in our neighborhood; this prompted me to find a way of disposing of honey some other way than a roadside stand.

After buying labels, jars, and license the cost per 1 lb. jar was 10c, assuming that it costs us 6c per lb. to produce. The price charged per 1 lb. jar is 20c and seldom is there a complaint about the price. Comb honey is sold for the same price. Of course light honey is sold more than dark and there are few requests for 5 lb. pails.

The honey must be bottled and labeled attractively. Both light and dark honey are used as well as comb honey and several jars of extracted and chunk combined. A one-peck basket is satisfactory for carrying the

I park in the center of the block, so when I have to go back for more honey, I have to go only a short distance.

Most people do not realize the value of honey as a food, but like to hear about it.

produce and the cardboard partitions from a box of jars can be used to keep the jars separated. Five 1 lb. jars and four combs can be easily carried, along with leaflets and folders.

Government pamphlets were obtained and offered with each purchase and the Kellogg Co. at Battle Creek, Michigan, has a honey folder which they will send in quantity to any one requesting them. These folders were given to every person contacted whether they bought honey or not.

In Toledo, Ohio, it is necessary to have a producer's license to sell your own produce from door to door. This license costs $3.00 and is needed within the city's limits. To buy and resell a $25.00 license is needed.

Canvassing the same place often cuts down sales so isn't very desirable; regular honey users are too scattered and I found that going to a different territory each time more could be sold. A territory near schools and where houses are close together is best. People in small houses buy more, maybe because they pay less rent. I park in the middle of the block and work from there to the end of the block, then back on the other side. This way, if more honey is needed I don't have to walk so far to the car.

The producer's name and address should be on the labels so people can write if they want honey delivered.

Most people do not realize the value of honey as a food and leaving literature is important. This method of selling will increase honey sales because more people will be contacted in this way.

I stopped to talk with a grocer in one neighborhood. He said that very little honey was sold in his store and he had only a few 4-oz. bottles on his shelves; yet in that neighborhood three or four 1-lb. jars were sold in each block.

At one place a lady and her bouncing son, who must have weighed 200 pounds, although he wasn't over 12 years old, invited me in. The lady purchased a jar of extracted honey and the boy insisted on some comb honey. He produced the necessary 20c against his mother's wishes saying that he had planned to spend it for candy anyway. He peeled off the cellophane wrapper and proceeded to eat it like a candy bar.

Another time the man who answered the door proved to be a former honey dealer. Taking a jar he unscrewed the lid, dipped his finger way down in the jar, then licked it off with a smack. After explaining for one-half hour about the art of handling bees, he bought four jars of honey.

Good weather increases honey sales and a knowledge of recipes and uses of honey as well as something about bees, and how honey is produced and extracted is important.

Toledo, Ohio.

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EXPRESS COMPANIES — ATTENTION

By Morley Pettit

Here is a matter that should be brought to the attention of the express companies in a forceful manner that will attract attention and gain consideration.

A few years ago I shipped a large shipment of five-pound packages crated in twos and they arrived with one dead and the other alive in nearly every crate. I think in every case the dead bees were smeared with syrup, and the feed cans empty.

Since then this has happened several times and where consignee reported to the express agent that the feed cans were empty the claim was refused on the grounds that the bees had been given insufficient food and had starved.

The point I wish to make is that in fairness to the shipper it should be called to the attention of express agents that bees could not starve while they are smeared with syrup, that a dripping can could not drown

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bees in a cage as the most of it would run out and the balance be licked up.

When I tell this story to the claims agent he is polite but uninterested because an individual has no backing. Perhaps if you published this story and other shippers would relate similar experiences and opinions a volume of evidence might be built up that would carry weight.

Tifton, Georgia.

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FIRST CROSS CARNI-ITALIAN

By Kenneth Francisco

As a rule, most beekeepers prefer pure strains of whatever race they are using, but many do have a cross or hybrid colony occasionally as a result of drones of some other race being in the mating flight territory. Some times the colony headed by the queen thus mis-mated, while showing a decided deficiency of other desirable characteristics, exceeds in honey production colonies headed by purely mated queens. Usually the undesirable traits of such a hybrid can be attributed to the drone element of the cross, being in most instances, either a hybrid of the Netherland (Dutch) bee which has spread so far since its early usage in pioneer beekeeping, or a hybrid of other races now kept by modern beekeepers.

In other agricultural pursuits, hybrids have a definite place, being recognized as superior in many respects to pure strains, hybrid corn and hybrid chickens being two outstanding examples. While the parallel is not exact, it would seem that by crossing pure strains of desirable races of bees, the hybrid thus created should offer to the beekeeper primarily interested in honey production, possibilities not easily attained through the use of either race in the pure state.

With a trial of this idea in mind, the report of the Iowa five-year test of Italian, Carniolan, and Caucasian bees led me to make a trial of a cross of Carniolan and Italian races during 1939, using as elements of the cross, the Carniolan queen mated to an Italian drone. Reasons for picking these races for trial are apparent from the report summary of the Iowa test. Quoting from this report: "Carniolans led in (1) honey production, (2) economic use of winter stores, (3) freedom from winter killing, (4) colony development in spring, (5) freedom from supersedure and queenlessness, (6) in disposition, and their most serious fault was their swarming propensity. Italians ranked second in the highly important item of honey production, and led in, (1) freedom from swarming propensity, (2) response to swarm control measures, (3) freedom from use of propolis".

It is apparent from the items listed in the report of the Iowa test that the two races have divided between them, those characteristics considered most desirable by the beekeeper. Comparing the Italian with the Carniolan we find, in color, the yellow predominating in the Italian and absent in the Carniolan, the Carniolan being brown or black, depending on age. In size the Carniolan is small as compared with large Italians and because of this smaller size they seem to fly more quickly and with less hum. The ability of Carniolans to fly and work at lower temperatures than Italians is also a worthwhile trait. Carniolans cap their combs exceedingly white, a little whiter than Italians. Carniolan queens lay more eggs than most Italian queens, and this contributes no doubt to their swarming propensity.

The workers in a colony with a queen of pure Carniolan blood mated to an Italian drone are not nice to look at, for some appear to be pure three-banded Italians, others pure brown Carniolans, and the rest, or about half, are a mixture of color ranging from a fraction of a band up to three banded.

In use the cross or Carni-Italian made a very good showing during 1939. In the mating nuclei the queens lived up to their reputation for laying by laying in every open cell and some when not removed from the nuclei soon enough, laid several eggs to the cell. Their laying ability resulted in stronger working forces after their introduction into full colonies.

Comparing Carni-Italians with pure Italians in the same yard during the extreme dry period of 1939, I found the Italians broodless or nearly so, and the combs empty. The Carni-Italian were at the same time able to continue brood-rearing and kept the brood nest surrounded with fresh unsealed nectar. During this period it was practically impossible to open and examine Italian colonies without a severe stinging even when smoke

was used abundantly, while it was possible to open and examine Carni-Italian colonies in the same yard without smoke and rarely receive a sting. By retaining colony strength the Carni-Italian was in better condition for the fall flow during which they surpassed the Italians in production.

The present winter has furnished a severe test for the wintering abilities of the Carni-Italian and other bees, with temperatures as low as 16 degrees below zero and 6 weeks without a chance for a flight. A recent examination of colonies showed mortality to be high in all hives, including Carni-Italian colonies.*

The experience of one season is insufficient test of this cross as swarming was practically nil during the period but from my trial of this cross I believe it worthy of a test in every apiary.

Logan, Ohio.

*Article received Feb. 19, 1940.

[Three years ago we tried a first cross between Caucasians and Italians. Virgins from a tested Caucasian queen were mated with Italian drones. The colonies were quite gentle and good honey-gatherers but there appeared to be an unusual and uncalled-for number of drones reared. We may try reversing our method, viz., produce virgins from an Italian queen to be mated with Caucasian drones, to find out if the resultant colonies would be much different in general characteristics than the first cross obtained three years ago.—Editor.]

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AN IDEAL BEE SHADE (Post Script)

By Bro. Stephen Babek

Judging from the letters received asking for more information about the Kudzu vine, my article in the October Gleanings, 1939, must have made a "hit" with many readers.

The two leading questions asked were, "where to obtain the plants", and "how to propagate them".

Most large seed and nursery houses have the Kudzu Vine listed. The prices range from 30 to 40c each. I have no certificate for shipping the plants, neither am I prepared to do so.

To increase the plants, the purchased roots may be planted in an open field like watermelons but about 15 or 20 feet apart, as the vines grow fast and long. When the vines are 8 or 10 feet long, the first few joints (buds) are old and tough enough to stand handling. Now pin each joint to the ground, and shade them with a little grass, leaves, or a small piece of board to enable them to root easily. Most of them will root without attention, but by the above method you are more sure. Of course, the ground should be reasonably moist for best results. The young tips of the vines are very brittle in the cool part of the day. The number of young plants thus obtained will, of course, depend on the strength of the stalk planted. Do not cut the vines from the main root till in the fall at which time they may be transplanted.

The Kudzu Vine is about the last plant to start growing in the spring, so do not think that they are dead when they come later than other plants.

Needless to say, the young plants need normal moisture for best results in growing and to make a nice foliage. An old, well-rooted plant needs little or no artificial watering.

Subiaco, Ark.

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A WORD ABOUT SWARM CONTROL

By E. S. Miller

Having done a considerable amount of experimenting with regard to swarm control, I was interested in Mr. Rowland's problems as set forth in May Gleanings.

The most serious objection to his method in "Condition No. 1" is that it would necessitate watching for swarms with time wasted and possible losses of bees. The reason why no swarms occurred upon the hatching of queen cells in the parent colony was that the prime swarm plus the bees returning to the old location so depleted and weakened the colony that there was no crowding and no necessity for additional room. The emerging queens would fight it out among themselves without swarming.

In "Condition No. 2" he separates the colony into two parts with probably half or more of the bees left above queenless on the old stand. The younger bees would not be apt to seek the old entrance and crowding would soon follow as more brood emerged. With crowded conditions, and with only a small opening and with added heat from below, the starting of queen cells and subsequent swarming is just what might have been expected. Where a number of queens emerge at about the same time, it is not uncommon for a colony to become hopelessly queenless.

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His proposed plan of dividing the colony, giving a queen cell to the part removed, does not seem advisable. In the first place, he would weaken the colony to such an extent that no comb honey would be stored for at least ten days notwithstanding the old bees that would return. By that time his short honey flow would be half over. To rear a queen it would be preferable to start a nucleus, using a comb of honey and a frame of hatching brood with adhering bees. The colony could be requeened after the honey flow is over which, by the way, is the best time to requeen. In this way most of the working force would be left with the colony. Swarm prevention and queen rearing are different problems and the two just don't mix, at least not in the same hive.

In comb honey production there seems to be only one sure-fire method of swarm prevention. It is to remove all of the brood about the time the colony acquires the swarming fever, and to insert in its place full sheets of foundation or drawn combs. A partial removal of the brood does not suffice. By this method all of the bees are left with the old colony and are available for quick storage of comb honey. The brood removed can be used for building up nuclei, for strengthening weak colonies or can be placed over a colony to be filled for extracting or for future feeding.

Of course, no efficient honey producer will waste time and energy in chasing swarms or in trying to prevent swarming by picking out queen cells.

Valparaiso, Indiana.

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SECOND GLANCES

By C. M. Isaacson

It seems as though some seasons the swarming instinct must be satisfied, and that Mr. Rowland's difficulties occurred in one of these (page 285). He does not state definitely as to whether the queen cells were given immediately after dividing in condition No. 2, but my understanding is that they were. If so, and unsealed brood was present, it might help to explain the swarming.

It is regretable that a greater degree of correlation between spraying and the bees' welfare cannot be worked out for colonies in orchards. With the certainty of more and **better quality** fruit coming from the use of bees, it would seem well worth while for orchardists and beekeepers to get together for some close study of the problem. Mr. Rea's article (page 288) is a good supplement to Dr. Shaw's in the April issue.

Every so often one of our old beliefs are shattered (page 292). Dr. Oertel's summary shows that far from a second mating of a queen bee being rare, it is a fairly common occurrence in some cases. It is surprising how few things we really know beyond doubt.

Morley Pettit's descriptions and illustrations of the equipment used in the Ontario Co-operative plant make a readable article. It is important to note the care taken in liquefying the granulated honey, to insure retaining as much as possible of the flavor. Every beekeeper knows how good honey tastes "warm from the comb" during a honey flow, and how easily some of that flavor is lost even with the most careful handling. The equipment shown for careful heating and quick cooling, is very worth while if it helps to save the valuable aroma of the honey.

Allen Latham is a believer in reasoning things out (page 304). It is a good method, but we do find cases where logical processes are confounded. Are we **sure** that a bee cannot "make up her mind"? Why will a colony, once started robbing, often keep it up during a heavy honeyflow? The firmly implanted **instinct** of nectar gathering would send them to the fields; is it not a sort of reason that tells some individuals that it is easier to steal honey?

On page 305, Mr. Southwick ably discusses a subject of real importance. Aroma is the main factor in the superiority of honey over syrups —it is worth a good deal of trouble to retain it. But does comb honey lose its aroma quickly? I always believed the opposite.

For their own good as well as that of the entire industry, users of carbolic acid for honey removal, should give serious thought to the editorial on page 310. If the name of carbolic acid ever becomes widely publicized in connection with honey, the result will be "just too bad"!

That new folder to fit the lid of five pound pails, as described in the American Honey Institute News Notes (page 319), sounds of value to any beekeeper retailing much honey. It is just another small instance of the way the Institute is helping us.

Middle River, Minnesota.

Editorials

A recent earthquake in the Imperial Valley according to press reports did some damage to the irrigating ditches breaking the cement lining in some cases.

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Latest on Winter Losses Winter losses have been heavier than the early forecasts would indicate. The cool to cold weather during April and May over the country has taken its toll of old bees that flew out and did not get back. While the loss was the heaviest in the Eastern States, colonies are reported weak in the Central Western States where the winter was less severe.

The season is late and there is yet time for wintered-over bees to build up for the crop. In other cases, when package bees can be obtained they will put colonies in fine condition for the crop.

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Top Supering We call special attention to page 353, the article, "Supering for the Flow" by C. B. Gooderham, Dominion Apiarist, Ottawa, Canada, and what he says about various methods of supering, especially top supering. Top supering covering a period of eight years in experimental apiaries resulted in slightly more surplus and a tremendous saving of time and labor. This is in line with our experiences for seven years. See also page 360.

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Killing the Goose That Lays the Golden Egg We have said it before, and we expect to continue saying it, that the big baking companies are getting fed up on the kind of "stuff" some beekeepers are sending them, and unless this poor off-grade dirty or overheated honey is kept at home we are liable to lose a very important outlet for **all** honey, good or bad. It is this poor stuff that is giving honey a bad reputation. The off-grades, unless processed and made clean, should be sent to the jobber or broker who has facilities for refining honey. After heating and straining the honey he can often mix it with another lot and make the blend entirely suitable for the baker.

Of course, there are beekeepers who know how to heat and strain their honey and blend it with another lighter-colored honey; but we can not make it too emphatic that the honey, amber or off-flavored, must be at least clean and in good containers or the baker will refuse to use it.

We have been asked by some of the largest brokers, jobbers, and carload shippers to continue to stress this point to the producers because they are convinced that unless some beekeepers stop sending dirty honey to the bakers that this important outlet for our product will be lost. At summer and winter conventions a warning should be given that baking companies will discard honey altogether and use instead invert sugar syrup which is always uniform and clean.

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The Silver Lining of this Spring's Cloud Last year's crop of honey for all parts of the country except in the extreme Southwest is apparently being cleaned up. Small lots of honey are still available but at prices that are low.

Price-cutting on the part of big buyers and distributors in the Central West appears to be responsible for this.

The present War, if it continues, may change the situation on food prices. In some of the European countries the price of sugar is up and honey is on the climb. If the war continues the upward trend may reach this country. No one knows.

White clover for the Eastern States is very promising. The heavy snows of last winter and late rains make clover much more in evidence than last season.

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A New Bee Enemy The white-fringed beetle is one of the most terrible pests that ever came to this country. Only 10% of its damage is done above ground and 90% under the ground by its larvae that feed on the roots of all plant life. Poisons in the form of dust or spray kill only the adults. The only remedy is to destroy all plant life above the ground by a

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weed killer. The roots will die and starve the larvae.

This pest has already got a start in several southern states. It kills all vegetation including trees. It has begun its work on alfalfa, cotton, and other honey-producing plants. It will tax the resources of both state and nation to keep it under control.

The boll weevil attacks only cotton and in a way it has been a blessing in disguise in that it has promoted diversified farming in the South. The white-fringed beetle kills everything. It is difficult to eradicate because it works underground where the poisons can't reach it.

Already large sections of land have been condemned and quarantined. If it ever got beyond control it would destroy civilization by destroying all food supplies.

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Strains of Bees Resistant to AFB For the last five years work has been done cooperatively by Uncle Sam and the various states in breeding and testing out various strains of bees that have shown a tendency to resist or clean up American foulbrood when it appeared. At first, some doubt was expressed as to whether such a strain could be developed by breeding from selected stock. But the release from the Bureau of Entomology and Plant Quarantine, (received too late for May) now expresses hope that is highly gratifying. From this release we quote:

> The experimental work has proved beyond question that some strains of honeybees are highly susceptible to American foulbrood, while others show pronounced tendencies to resist the disease. The burning of infected colonies, therefore, is highly important because it not only reduces sources of infection but likewise helps to eliminate stock highly susceptible to disease. The shaking treatment formerly used to control this disease merely prolonged the existence of susceptible stock, and colonies so treated served more or less as perpetual sources of infection.
>
> Several strains of bees under test show resistance to a much higher degree than that found in the average colony. In most cases there has been an indication of increased resistance with each successive generation where queen progeny from resistant queens have been mated under isolation with drones from their own mothers.

The results thus far are most gratifying and fully justify the hope of the promoters that in time the elimination of the strains most susceptible to the disease by burning and increasing the number of strains that are resistant may materially help the inspectors in a clean-up for their respective territories. It is clear that the shaking treatment does not cure nor remove the bad ones while the burning of all infected material does do so.

The Bureau is wise in confining its distribution of this resistant stock to only "State Agricultural Experiment Stations or to State Departments of Agriculture". To release such stock direct to private queen breeders would result in extravagant advertising that would deter the work rather than help it.

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Destructive Airplane Dusting Again Airplane dust poisoning to save the plants, like cotton and alfalfa, that yield nectar or pollen, is doing terrible damage in the destruction of whole apiaries of bees in several of the southern states, and again in Arizona and California. There are some areas where bees can not be kept any more.

The fact that this destructive dusting is done by Government and State men in some cases makes the problem all the more serious. Sometimes the State pays the beekeeper for its damage and more often it does not and the beekeeper stands the loss.

Louisiana, we are informed, has paid the beekeepers in and near New Orleans $25,000 damage already.

The beekeepers in and about Corpus Christi, Texas, have not been so re-imbursed and we have been told that they have left the region.

Beekeeping has been hurt or wiped out in parts of California where alfalfa and cotton are grown.

The State and Nation is willing to save the beekeepers from loss but how to do it is the problem. So far the most hopeful means is by the use of a repellant mixed with poison dust but none so far has been found that is fully effective. The drugs phenothiazine and milkol are being tried and it is hoped that if not wholly successful they may when mixed with something else solve the problem.

It is here we need some research work. The Government has already started on it. See page 358.

If the State or Nation in each case will pay for the destruction of bee life it won't be long before a solution of the problem will be found.

In like manner poisonous dusting in the state of New York (see page 291, May Gleanings) has driven bees out of certain orchard sections, but if full fruitage is desired bees will have to be brought in again.

Water Running Up Hill That is just what is occurring in some of the hundred-acre irrigated fields of orange and alfalfa.

Elsewhere mention is made of honey running up hill. Of course, it can do so under pressure in a closed pipe or flume; but in effect water can run up hill in open ditches.

You see it is this way: The high spot of a given field is selected. This high spot is lower than the source of water. From the high spot small ditches radiate in all directions on grades that will reach every spot in the field. Thus it happens that water reaches all over the field, some parts of which are much higher than others.

This means oranges, alfalfa hay, six or seven cuttings per season, and last, but not least, orange and alfalfa honey by the carload from up north in the Willamette Valley to the valleys all through California and the great Imperial and Salt River Valleys in the southern part of California and Arizona.

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"The Burning Shame" of the Southland A number of years ago while in Florida, the writer published a series of articles under the above caption. They referred to the habit of cattlemen who, when the ground was dry before the spring rains came on, would set fire to the brush and dry grass in a number of the Southern states, notably in Florida, Louisiana, and Texas. The idea was to secure fresh green grass for the cattle when the rains came. This destroyed many valuable honey plants, and protest after protest against the practice came from the bee men in these sections, but still the burning shame kept on.

The Forestry Division of the State of Florida showed by moving pictures how these burnings were destroying valuable timber as well as shrubs and plants which furnished nectar for bees, and although these protests went forth from the Forestry Departments of several states, the burning was continued.

Now comes the welcome information in an article by H. E. Coffey, in the Beekeepers' Item for March, under the head of "Pulpwood Plants Replace Forest Fires". It appears that the pulp mills will be able to manufacture newsprint paper from this rank growth in the Southland if the forest fires are stopped.

The newsprint consumption in the United States, Mr. Coffey says further, is now about 4,000,000 tons annually. A substantial portion of this has heretofore been coming from Scandinavia and Finland. Since this supply has been cut off, the manufacturers of paper have been trying out the kind of undergrowth and timber that grows all over the Southland, and this industry in several of the Southern States is now growing by leaps and bounds, thanks to the second Great War, if we can thank it for anything.

Mr. Coffey winds up his article by saying, "No, E. R. R., it will not be many years until you can travel all through the South without finding many people who are foolish enough to burn over their valuable timber lands. Too, you will find great industries flourishing. One of these is the new pulp mill."

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The Miracle of Irrigation When you see water running up hill; when you see desert waste-lands that wouldn't support a jack rabbit, flowing with milk and honey; when you see those same desert lands covered with green alfalfa and feeding thousands of sheep and cattle, and occasionally a bee yard; when you see on this same bad land thousands of acres of long-staple cotton for automobile tires; when you see on these erstwhile deserts, thousands of acres of citrus fruits—peaches, prunes, and nuts galore; when you see mountains cut in two, great dams that prove the scripture "by faith ye shall remove mountains", you rub your eyes and wonder, "Am I seeing things, or is it a dream?" and then you come to the conclusion it must be a modern-day miracle of harnessing the forces of nature. That means using the melting snow of the mountains and impounding them in great dams and ditches, changing the course of rivers, building levees to keep the waters from going over the banks and last, but not least, lifting the waters by means of cheap electricity a few feet from below the desert levels to the surface where it can water the lands.

It is Not All Gold That Glitters

But hold on, Mr. Root, you are painting a picture of a promised land of milk and honey—a bee para-

(Continued on page 375)

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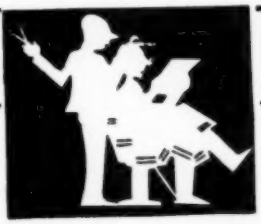
Just  News

The next meeting of the Middlesex County Beekeepers' Association will be at 2 P. M. on Saturday, June 29th, at Hildreth's Rundlestone Farm on Washington St., East Holliston, Mass. Mr. R. E. Newell of Framingham Centre, will open the hives and speak on "Summer Management" and "Increase". Mrs. Chester D. Norton will be in charge of the Ladies' Auxiliary supper featuring potato salad with honey dressing, cold meats, honey rolls with coffee, ice cream with crushed strawberries and honey cake.—A. M. Southwick, Pres.

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Minnesota and North Dakota beekeepers meet jointly at Detroit Lakes, Minn., June 21-22. This is in the heart of Minnesota summer resorts. Good fishing. This should help in bringing good attendance.—Arvid Benson, Sec.-Treas.

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The Michigan Beekeepers' Ass'n. will hold its 75th Diamond Jubilee meeting on August 1 and 2 of this year. The place will be Frankenmuth, Michigan, the banquet being held the evening of the 2nd, with one of the World Famous Frankenmuth Chicken Dinners, Country style. The meeting on the first will not take place until late in the afternoon. This part of the meeting is meant more for those who have to come long distances and wish to arrive the day before the regular meeting begins. This will allow them to get together in the evening for moving pictures, impromptu talks, and also music by the Honey Harmonizers. The day of August 2, will be the regular meeting with a planned schedule of talks and a well arranged program at the banquet. The meeting will be held outdoors in an exceptionally fine park, with accommodations should the weather be bad. Our 75th year as an association is something to be proud of and we hope that all Michigan Beekeepers will give us their support. We wish to extend a special invitation to all out-of-state beekeepers and hope that there will be many with us as in the past.—A. Baxter C. Woodman, Treas.

The fourth annual meeting of the Apiary Inspectors of the North Central States was held on the morning of March 22, 1940, in the Purdue Union Building, Purdue University, West Lafayette, Indiana. This meeting was called to order at 8:00 a. m. by Chairman, R. L. Parker, who acted as secretary pro tem. The members present were J. A. Munroe of Fargo, North Dakota; A. G. Ruggles, St. Paul, Minnesota; E. L. Chambers, Madison, Wisconsin; L. M. Gates, Lincoln, Nebraska; R. L. Parker, Manhattan, Kansas; and W. A. Price of Lexington, Kentucky. The merits of the model apiary inspection law, prepared by Mr. J. I. Hambleton in October, 1939, were read and discussed. The concensus of opinion in regard to this model apiary inspection law is stated in the following resolution. A motion was made by E. L. Chambers and seconded by L. M. Gates that the following resolution be sent to Mr. J. E. Starkey of Indianapolis, Indiana, the President of Apiary Inspectors of America: "Resolved that this model apiary inspection law leaves too much to be done by rules and regulations which are not an actual part of the law and such rules and regulations should be incorporated in a law as a part of it." The motion in regard to this resolution passed unanimously. Motion was made by J. A. Munro and seconded by E. L. Chambers that the certificates of apiary inspection be standardized in regard to the shipment inter-state of beekeepers' equipment and colonies of honey bees. Motion carried unanimously. The chairman appointed a committee to work upon this standardization of the apiary inspection certificates—E. L. Chambers and R. L. Parker. Officers were elected for the ensuing year as follows: Chairman—R. L. Parker, Vice-Chairman—C. A. Reese, Secretary-Treasurer—L. M. Gates.

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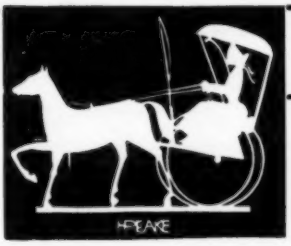
Tentative Program of the Fifth Wabash Valley Round-Up of Illinois and Indiana Beekeepers at Newport, Indiana, Saturday, September 7, 1940. "The Use of Resistant Stock in Commercial Production"; G. H. Cale.

(Continued on page 399)

Spinster Jane Says:



Spring is late in coming, this year. It will soon be mid-May, and there is but little growth yet. No leaves are out on the trees, but willow catkins drip pollen, and the bees are busy laying in a goodly store, thrifty as always. Last night the water-trough froze over with real honest-to-goodness ice.

Boy put his bees out early as possible, because of the cellar flooding with water during the spring freshet, but not before they had begun brood-rearing.

The big swarm of maverick bees he so laboriously carried home along with a portion of the big tree housing them, is doing itself proud. Its queen is a fine one, and it should produce abundant honey this summer.

One smaller colony seemed pretty lazy, so Boy sent for a new queen, and is she a busy lady! He had some combs to repair in her hive, so brought these frames into the house. I had just got a new pair of glasses, so was able to see the tiny eggs in every cell. She surely is very prolific and needs no extra vitamin E. Eggs had even been laid in cells out on the frame edges. And thereby hangs a tale, as well as many fan-shaped combs.

Last summer, Boy purchased a super of drawn-out combs from a neighbor who kept bees. This, of course, was to save his bees from taking time off to draw out comb foundation when there was nectar galore to be garnered, honey harvest being in full swing. Now this man had ideas of his own. His idea was to get back to Nature's way, as closely as possible. His hives he built higher and narrower, like inside of trees. The resulting frames were too short for ordinary hives, so Boy had to cut out the combs, transfer them into regular frames, and patch up the resulting spaces with pieces cut from other combs. He really made a pretty good job of it, the resulting comb resembling a patchwork quilt. The bees will in all probability do a bit of work on it, themselves, and there will be no open spaces. They love things tightly sealed. All along the edges of his (this man's) frames, the bees had built new, beautifully white combs. At the sides these fastened the frame and hive sides firmly together, and along the bottom were a series of fan-shaped combs. All these cells were filled with eggs.

Another thing: The bees are bringing in nectar, though where they are getting it puzzles me. Wild strawberries are in bloom,—a few at least,—but there are no other blooms except trailing arbutus, the Bluenose emblem, and a few hepaticas and spring beauties. I wonder could this be from maple trees.

This should be a wonderful year for honey, and the outlook points to a greater demand for this delicious sweet. Should there be a shortage of sugar, and a consequent soaring in price, honey should come into its own.

Honey sweetens everything, but what about trying it out on a sour disposition, rather than using bicarbonate of soda! How easy it would be to rid the world of cranks and pessimists!

There is an old slogan we all often see,—"Sweets to the sweet." Was this not some confectioner's slogan? Let us make it "Sweets to the sour", but be advised and do not label your gift that way when giving honey a try-out. There might be, occasionally, one who would resent that. One thing is sure: Bees full of honey are quieter, more contented, easier to manage. Let us try to see what it will do for our grouchy males.

And while we talk of bees and make plans for the summer, just across the ocean, people just like you and me are fighting for freedom and peace. Think of being forced from their peaceful work of growing flowers and flower bulbs, to shoulder rifles and see their lovely fields trampled by brutal invaders, their homes shattered by bombs from above, their children weltering in their own blood.

May God fight for us, and may Right, not Might, triumph.

Thank God for peace and freedom.
—Spinster Jane.

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The Magic of Irrigation

By E. R. Root

Horace Greeley said "Go West, young man". While that advice might have been good then it may not be today. The book "Grapes of Wrath" paints a picture, while a little over-drawn, is too true today. See the Editorial, page 371, that shows that the "Go West, young man" policy better wait till the great dams are completed. The pic-

tures here reproduced, with legends, show what is going on in the Imperial and Salt River Valleys today. See page opposite also pages 376 and 377.

The top picture on the page opposite, shows Mr. and Mrs. T. M. Shepard, leading beekeepers of Calexico in the Imperial Valley of California. They are standing under one of their slatted sheds as shown more fully below at the right. Their residence appears on the left. It was they as well as Mr. Lloyd Sorensen of the Bee Industries, Inc., Alhambra, California, who showed me the irrigation project in and near Calexico and Brawley. See page 302 of our last issue.

The bottom picture shows both Mr. and Mrs. Shepard and Lloyd Sorensen in front of the control valves of the All-American Canal that will furnish water from the Boulder Dam when completed. Further details are shown in Fig. 17 on page 376.

This All-American Canal is America's greatest American ditch, and 80 miles long, and when completed will cost $38,000,000. But this cost will be paid in time by those who use the water. Likewise the cost of Boulder Dam ($120,000,000) will be liquidated by the users of water and electricity.

Farmers and beekeepers should not rush to this country as it will be some time yet before this All-American Canal will make available new irrigation land.

Fig. 21, page 376 shows the immense steel pipes that are to carry the water from this All-American Canal across the river here shown into the canal beyond.

Irrigation Near Phoenix, Arizona

It was Mr. W. A. Crockett, State Bee Inspector of Arizona, who drove me around among the irrigation ditches near Phoenix, Ariz.

Fig. 1 shows one of the numerous electric pumps that raise the water from shallow wells to the surface where it flows in big ditches to laterals.

Fig. 2 shows the volume of water coming from the pump in Fig. 1.

Figs. 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14 and 15 show the big main ditches in Arizona some of which are lined with concrete to prevent the water from seeping through a porous wall of the embankment. See Fig. 4.

Fig. 9 shows how this water goes under the roadway by flowing down and then up on the other side of the road. See Figs. 2, 3, 9 and 10.

Fig. 4 shows a smaller lateral that delivers water to the high point on a piece of land so that it can flow down hill in all directions as in Fig. 11. The fields are graded in such a way that the water can reach every square yard from the high point.

Figs. 1, 3, 4, 8, 9, 10, 12, 13 and 19 show concrete roadways in Arizona along side the irrigating ditches and they extend in all directions.

Figs. 16 and 20, show the unimproved desert land with giant cacti in the Indian Reservation near Phoenix, Arizona.

The Government buildings are shown in Fig. 18. Uncle Sam is expecting to irrigate this Reservation but the Indians will do all the work under W P A.

Figs. 22 and 23 show the immense stacks of baled alfalfa hay along the sides of the roadway to be loaded on big trucks and hauled to market. It is a common sight to see ten-ton trucks and trailers carrying baled alfalfa hay from these irrigated regions in the Imerial Valley, Californa, and the Salt River Valley of Arizona, to market. It seldom rains in these valleys and one can see both cotton and alfalfa baled in great stacks out in the open. Incidentally, both cotton and alfalfa mean honey to the beekeeper.

Beekeepers of the East should not get the idea from what is shown here that this must be a paradise for bees. While the honey is of good flavor it is on the amber order. The average annual yields are lower than in the good honey areas in the East. They must bear in mind also that it is a territory hot in the summertime, reaching a temperature of 120° F. in the shade. The interior of houses can be cooled by a very simple apparatus consisting of a small electric fan blowing a fine spray of water into the house. This on evaporating cools the rooms down to 80° F. which in this dry climate is not bad. The Shepard's cool their residence in this way, middle picture. This scheme of air-cooling would not work in the East or where the atmosphere is moist.

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THE MIRACLE OF IRRIGATION
(Editorials Continued from Page 371)

dise! Be frank and tell the whole story.

Beekeeping on the Desert Lands

Bees are only a small part of these irrigation projects shown on pages 376 and 377. They are scattered over wide areas. The yields per colony are lower than in much of the territory in the East. Most of the alfalfa honey of the hot irrigated districts, while of good flavor, is amber and does not enjoy the ready sales of the light or white alfalfa of the irrigated regions of Idaho, Montana, Wyoming, and Colorado. War conditions just now have left a large part of last year's crop of honey in the Imperial and Salt River Valleys unsold.

Again it is awful hot in the summer. The sun's heat may range from 120 to 140° Fahrenheit. You will wonder, as I did, if it would not be more comfortable in a place called Hell. When you walk over the deserts you get hot sand in your shoes. You are told to look out for snakes and when you accidentally step knee-deep into a gopher hole, you wonder if you haven't stepped into a nest of them, you get the jitters and wish you were with Admiral Byrd at the South Pole.

Once more you ask if not all this development of dams, irrigation ditches, and laterals is WPA. Yes, a part of it is. The rest is state and private capital.

Well, then you ask "Why doesn't Uncle Sam put some of this money in the East and dry up our swamplands?" He has done this: Witness the garden lands of the Southeast Coast and the Everglades, some of the greatest garden spots of the world.

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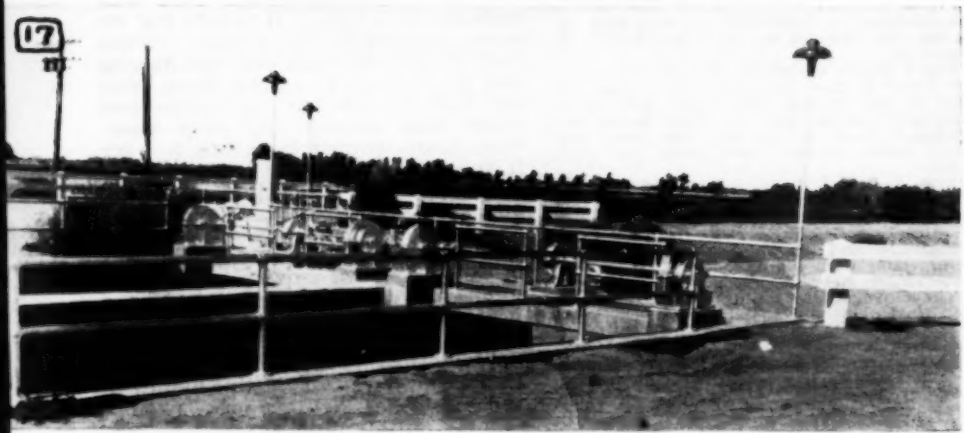
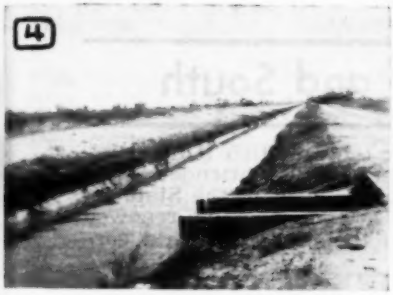
The Romance of Irrigation in the



This set of pictures taken by E. R. Root gives one an idea of what has transformed the great deserts in Southern California and Arizona into Gardens of Edens through the agency of water from wells, melting snows of the mountains, and from the great dams now in progress of building. Beekeepers or farmers should not rush into this country unless they are prepared to buy out someone already located for the territory is all taken. When the dams are completed five or ten years hence more territory will be available. **(See Editorial, page 371.)**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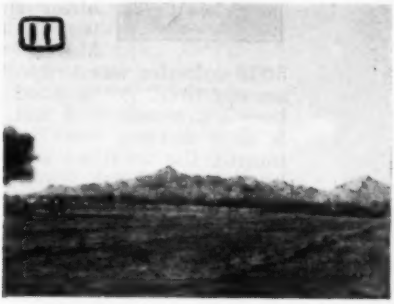
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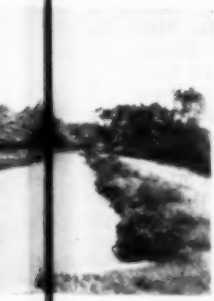

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From North, East, West and South

NORTHERN CALIFORNIA, May 2.

Weather: The last two-thirds of March was ideal for both bees and beekeepers. Then April commenced with a rain and many feared another flood such as we had early in March when some 5000 colonies were reported lost. The second flood got a good start but no bees were reported lost. After April 5 and during the balance of the month, the weather was all any beekeeper could ask for and bees commenced very early in the month to store a surplus. Swarming commenced early in April and continues to date.

Honey Flow: Few beekeepers in the Eucalyptus district had their bees ready for the flow when it came early in April. Those who had their bees ready, now report 100 pounds to the colony. Those whose bees built up on the flow will get 60 pounds to the colony. Extraction commenced early in March and continues today. About April 10, the orange flow came on and many bees from this district were taken from a good eucalyptus flow to the oranges. The prospect at this time is for a good honey crop.

Honey Market: There is little change in prices offered for honey. There were hopes that orange honey would start at 8 or 9 cents but the little offered to date has brought only 6 and 7 cents. The quality is very good. There is little to be said for the prospect for sage—the plants have a good growth and some honey has already been produced but not enough yet to know what total amount will be produced.

Beeswax: There is little change in the price offered for wax.

Miscellaneous: The Golden Gate Exposition will open again in the latter part of May, and there is an urgent request on the part of the exposition management for an exhibit such as the State Association put on last year. The secretary of the Association has made an attempt to get the wishes of the beekeepers on the subject but they all seem too busy producing honey to give this important matter the attention it deserves.

Dr. Eckert who has attended meetings in various parts of the State reports good attendance and a renewed interest in the production and care of honey.

Mr. H. M. Krebs of the State Department of Agriculture, in charge of inspection, reports an active interest on the part of inspectors to make this the banner year for the health of bees.—Cary W. Hartman, Oakland, Calif.

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SOUTHERN CALIFORNIA, May 1.

Weather: April, the month for orange honey, we would say, was better than the average taken over a period of years.

A few very hot days and then the flow started about April 7, and continued for about two weeks in most orange districts. One rain during the month added from one-fourth to one inch of moisture over Southern California.

Honey Crop: The orange crop is made and the black sage is pretty well gathered for 1940. The yield per colony from orange differs greatly owing to the condition of the colonies at the time the flow started. Reports from black sage are about the same. The fellow with big strong colonies and plenty of surplus combs got surplus honey. Let us make a guess from reports; Black sage as much as a can per colony; orange from 15 to 80 pounds. Other sources are later and yet to be heard from.

The Market: We have heard of no offers as to prices thus far for 1940 orange honey which is our first white honey. Beeswax remains around 20 to 21 cents.

Miscellaneous: While we feel that a big crop in Southern California is out of the question for this year still every one who has his bees in shape should get some honey. All too many colonies were not up to the best honey-gathering strength until near the close of the flow from the orange. And while we are speaking of colony strength in early spring the need for pollen comes to mind. We heard a remark by a beekeeper some time

ago saying, "You know, a certain kind of honey contains 33⅓ per cent pollen." If we have certain honeys that contain an unusual amount of pollen, colonies having a supply of such honey would have a great advantage in early brood-rearing.

Daylight opening day May 1, found us fishing rod in hand, beside Strawberry Creek near our mountain cabin in the San Jacinto Mountains; 7:30 A. M. found us with a limit of mountain trout (25). We feel that it is always best to get the urge out of our system early in the season.

The use of tartar emetic, a deadly poison, in the spraying of the little orange just after the petals drop has caused considerable discussion between the beekeepers and the orange grower. This poison is used with a sugar-sweetened mixture of water. They assure us that the solution is not sweet enough to attract the bees. Most orange growers feel that the bees perform a real service in the setting of the fruit and are willing to work in harmony with the beekeeper.

Winter and summer—the wet season and the dry, after all is about what our Southern California seasons amount to, and most of it might be called summer. There is scarcely a week when bees do not gather pollen, and where there is pollen there is likely to be a little nectar. Many times this is more of a detriment than a benefit, nevertheless a few warm days, even in January, and the bees will find something to busy themselves on, even if they do come back home and eat more than if they had saved themselves the effort of going out to seach for more.

White sage and wild buckwheat look fair and with favorable weather should furnish some honey.—L. L. Andrews, Corona, Calif.

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TEXAS, May 1.

Weather: April was very much of an improvement on the last two years, since 3.63 inches of water fell. The weather during the entire month could be classified as cold, cloudy, and wet as the temperature was 4.5 degrees below normal. The rainfall while not being sufficient to wet the soil more than two inches, because of cloudy weather, wild plants and cultivated crops were able to bring their spring growth up to normal. Everything looks much better than for years, yet there is no sign of a honey flow. The bees have been able to get a bare living from the field but horsemint is not present in any great quantity and mesquite is not sufficiently far along to demonstrate what it may do. In some small localities guajillo gave a light flow but the flow lasted only a few days. The pound package and queen men had their own sorrows. Just at the time that they had to begin operations to supply their early trade, continuous cold accompanied by cold rains made the handling of bees next to impossible yet, strange to say, working with bees at temperatures ranging around 40° did not seem to harm either the newly transferred larvae or to chill the brood within the hive. At the end of the month things look well for the beekeepers and the fraternity is looking for a flow from a mixture of belated spring plants, some horsemint and mesquite. Just what the outcome of the copius rains in the north-central part of the state will have on the cotton honey crop and sweet clover crop cannot be predicted.

Miscellaneous: The program committee of the Texas Beekeepers' Association has about completed the arrangements for the program of the annual meeting which will be held at New Braunfels, June 21 and 22. Quite a number of people will appear on the program who helped start beekeeping on a large scale many years ago and, because of the nearness of New Braunfels which can be called the cradle of beekeeping in Texas, to the present beekeeping areas a large attendance is expected.—H. B. Parks, San Antonio, Texas.

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ARIZONA, April 30.

Weather: We have had an unusually mild winter with very little rain or snow. April has been cool and cloudy but very little in the way of moisture. This is the third straight year this state has suffered due to a shortage of rainfall.

Condition of Bees: I don't believe the bees in farming areas are affected quite as much from shortages of

rainfall as are the bees of the desert areas. However, most of the bees within the state are in the farming or irrigated areas. Crops may be changed due to shortages of water to be had.

Bees built up very slow this spring, regardless of a large carry-over of honey in the colonies. Pollen was fairly plentiful and no bad weather through March. I thought this to be a local condition until others claimed to have the same trouble regardless of honey being plentiful in the hive. Here locally in an effort to get bees building up faster I set many supers of honey out in the open for bees to take out the honey. As soon as the frames were fairly clean they were set back on. This is safe where there is no foulbrood, as is the case here.

In a few favored locations there are exceptions to the above statement regarding bees building up slowly. In one place I observed bees gathering and strong colonies sealing a little in February. Here locally bees have been gathering enough honey from Feather Duster or dwarf catsclaw to build up on. The first mesquite bloom has already opened and bees are working it very little. Weather or the nights may be a little too cool for it at this elevation.

Miscellaneous: The world over I suppose producers start out with their spring work with high hopes of a bumper crop in return for their year's labor. And as the season advances either unfavorable weather or drouth sets in and one sees their early hopes begin to fade. Sometimes, however, weather conditions change suddenly and the honey plants start producing as they should. I cannot say definitely what the honey crop will be. No doubt some areas will get a fair crop, but other areas are going to be affected by a shortage of moisture.

I do not know of any old honey in the hands of producers being held for a higher price, as is reported for California.—Leslie Wedgworth, Oracle, Ariz.

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OREGON, May 2.

Weather: The general weather conditions in Oregon have been fairly close to normal with possibly somewhat of a tendency to be more cold and rainy than usual. The past winter in general was very mild, which means that the honey plants have come through the winter in very good condition. The winter and spring have been unfavorable for the bees from the standpoint of the consumption of stores. Last fall was rather open and the bees used up an unusual amount of their winter stores before winter finally set in. With the continued cool and somewhat rainy weather this spring, we now find that our bees are in rather serious need of stores, with the probable result that many will starve to death during May unless given special attention. Many of them will not build up as well as they should for the honey flow late this month and early next month.

Crop Prospect: It is always risky to predict the honey crop in this section, because conditions may change so suddenly. If it were not for the fact that bees are running short on stores, the prospects would be very good for a crop, as the honey plants in general are in excellent condition. If intermittent rains continue with plenty of sunshine in between, the honey crop should carry on for a longer period than usual. However, it is not an unusual experience in this section of the state to have the rains suddenly stop at this time of the year with practically nothing in the way of moisture until September.

The Honey Market: There seems to be almost no carry-over of honey for western Oregon. No late information is available from eastern Oregon. Prices, however, remain the same. Five-pound buckets sell from 37 cents to 60 cents, and not all of the low-priced honey is of low grade.

Meetings: Oregon beekeepers will be pleased to learn that Dr. J. E. Eckert, Specialist in Bee Culture for the University of California, will be passing through Oregon in late June, and arrangements are being made to have a meeting at which Dr. Eckert will show some interesting pictures and give us a talk on some of his studies made in California. Mr. Chas. H. Hays, President of the Multnomah County Beekeepers' Association, informs the writer that arrangements have been made to have this meeting on the evening of the 18th in Room 701 of the Public Service Building in Portland. There is a possibility that arrangements can be made to have Dr. Eckert speak to a meeting of beekeepers somewhere in eastern Oregon, as he will be driving from Boise to Portland.—H. A. Scullen, Corvallis, Oregon.

MINNESOTA, May 5.

By June, when you see this, bees will cease scouting for crocus and ground feed. Swarming conditions will be in evidence — unless "the necessary precautions" have been taken.

Conditions: In spite of predictions that the warm fall would mean heavy consumption of stores and so poor wintering, the colony losses seem to be no more than usual. A beekeeper who has tried various methods writes that his 6% loss is "the best percentage I ever had". Another writes "the bees wintered 1% loss outside and 20% loss in the cellar". My own loss, outside, is 4%, which may be as high as 10% later on. A very critical period sometimes develops right after fruit bloom, when rainy weather and scant stores can ruin a colony's chances for a harvest.

Present hive conditions are generally light in stores and if your colonies are alive as you read this it means they had sufficient food or that they nearly starved and will use the honey flow to build up again.

Prospects: Concern has been felt over the bee pasture outlook. Where sufficient rain fell last fall the clovers came through the winter in fair shape. Elsewhere clover is not as plentiful and it may be necessary to move some yards to better pasture. Recent rainfall has been spotted. With the present lack of subsoil moisture a light rainfall before July will almost surely mean a short crop.

There is a small hold-over of honey, probably due to prevailing low prices, which hover around 5c in ton or carload lots. It is safe to say that the larger part of last year's honey crop was sold at these production prices because beekeepers had to do so.

Miscellaneous: Since improvement comes through change and seeking to know what other beekeepers deem our most pressing problem, the following question was asked several beekeepers: "What one thing does Minnesota beekeeping need most?" The answers are interesting.

One writes: An orderly cooperative marketing of our standardized honey, so that groups of small bottlers, chain stores featuring price-cutting on "distress" and poorly blended honeys may be eliminated. We should feature an outstanding Minnesota product, established by law according to U. S. standards so as to be uniform everywhere.

Another: Minnesota beekeeping needs a foulbrood bee inspection service that will give at least fifty percent more service than at present.

Others: Unity among beekeepers and a better market. Honey advertising and consumer education.

Probably we need all these things. Most beekeepers feel that honey merchandising is our biggest problem. While we have large honey packing arrangements and the Minnesota crop alone is in millions of pounds, we are floundering around without much progress toward a solution of this vital problem.—Bruce L. Morehouse, Montevideo, Minn.

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INDIANA, May 2.

Weather: In the last eight months precipitation has been far below normal. Very little rain or snow has fallen and, notwithstanding recent rains and snow, much more moisture is needed. With prevailing north winds, temperatures have been low and the season is more than two weeks late. Fruit bloom has not yet appeared and today the ground is covered with snow. Bees, consequently, have been slow in building up. Notwithstanding unfavorable conditions, some clover plants are showing up but they are not as plentiful as might be desired.

Honey: Most 1939 honey will be out of the hands of beekeepers by the end of the season although there are a few ton lots still held by the larger producers.

Miscellaneous: Since price-cutters have succeeded in reducing prices below cost of production, many beekeepers seem to be losing interest and are offering their bees for sale. Honey in this locality has been retailing from stores at prices which would afford no profit whatever to the producer even if sold direct to consumers without the dealer's profit. The price-cutter is, in my opinion, a pest which is a greater menace to the industry than is AFB and more difficult to exterminate. It seems that beemen are unable to organize for their own protection. What is the remedy? Is it to sell only to the large

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processors as some claim? Even so, it will be at the other fellow's price.

I doubt that the 1940 census will adequately show the number of colonies of bees or the amount of honey produced. I know that my bees and honey were not included. The enumerator refused to list them, as the questionnaire used in the city does not include farm property or rural products. Since I am in town and the bees are outside the city limits, they were omitted. The same is probably true with regard to farms and farm products owned by city dwellers, especially where there are no tenants or where tenants have moved.

While some orchardists in this vicinity may not be any too careful about spraying during fruit bloom, we have not as yet noticed any serious effects from poisoning. Our immunity may be due to the abundance of dandelion bloom usually present at this time of year. The bees seem to prefer the dandelions though it is doubtful if they get much nectar from this source.—E. S. Miller, Valparaiso, Indiana.

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NORTHERN MAINE, May 2.

Weather: Here in Northern Maine, the most northern point in the United States east of the Great Lakes where bees are kept, we have to contend with conditions which would seem to make beekeeping wholly unprofitable. The big problem is to carry the bees safely through the long winter confinement, practically half the year inactive. The past winter has been rather even with but one really bad storm. Snowfall was a little more than normal and remained late. March and April were cool and cloudy with little sunshine. With two days of warm weather a cold rain is on today.

Condition of Bees: The bees were taken from winter quarters on April 29, badly in need of a flight. Brood rearing stopped too early last fall. Stores were largely from late summer and fall flowers which granulated considerably. The temperature in the cellar ran to below forty degrees most of the time and yet the bees were quiet until the first of April. Few colonies died outright but 70% are badly depleted. Warm weather, which should follow soon is all that will save the situation. Nectar secreting plants have wintered well.

Prospects are not bright because of the condition of bees, but with favorable weather there may be a fighting chance for a fair crop. I have seen similar conditions before when favorable weather and bountiful bloom made a wonderful change. The old honey crop is all cleaned up and the local market will be ready for any new crop secured. With plenty of moisture a clover crop is assured.

Miscellaneous: The number of colonies kept in this territory is limited. With a short season in which nectar can be gathered and the winter losses which are most difficult to control, there is little inducement to engage in commercial beekeeping. The quality of honey secured is one compensation. Nearly all honey produced is comb, mostly in sections, and the consumers who buy honey demand honey in the comb. The flavor of extracted honey imported from the West or Middle West does not appeal to the average taste. They have become used to local flavors and shy at other honeys, as a rule. The use of extracted honey in cooking is on the increase and in time there will be a demand worth while, if the purchasing power of the population is not destroyed. All industries in this section is dependent on the success of the potato grower and the past few years has brought little prosperity to this section. The farmers of Aroostook are carrying the heaviest tax burden of any farm area in the United States.—O. B. Griffin, Caribou, Maine.

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ONTARIO, May 3.

The weather here in the Toronto district has continued cool and dry during the past month with precipitation much below the average. Today we are having a drizzling rain with temperature in the forties and to date we have had but a few days in which bees have flown freely. On April 24, first pollen was noticed and during the last two days of the month a little nectar and pollen came in from soft maples.

Crop Conditions: A few pussy willows are open in sheltered locations, but generally speaking we would say the season is ten days late. Covered all winter with snow and with a cool

spring season but with little freezing at nights, clover looks as well as it did last fall. But the acreage of alsike is limited and we have few signs of white Dutch clover, as the drouth of last August injured and in many cases destroyed outright the young clover plants. We commonly hear people and even beekeepers among them, say that lots of rain will bring on the clover even if none is in evidence in the spring. This to my way of thinking is absolutely wrong as alsike is strictly a biennial for all practical purposes, and we have never yet seen white Dutch clover yield honey the first year the seed germinated. Of course, most locations have some alfalfa, but with us at least it has never been a honey yielder equal to alsike insofar as quantity is concerned, and it certainly does not compare in quality with alsike, at least not in our locality.

Market: No change in markets for the simple reason that no honey in quantity lots is to be had here in Ontario so far as we can learn.

During the last few days we have received forms for bids on honey to be delivered to certain Government institutions and I am now writing to tell them that we are not in a position to make any offers and further that we cannot tell them where they can get any honey. As to market prospects for the future, in these troublous times one man's guess is as good as another's and I for one would not even make that "guess".

Winter Loss: Latest reports make it clear that winter losses are heavy in Ontario—just what percentage would be correct is difficult to say. In a letter just to hand from Dr. Dyce of Guelph, our Provincial Apiarist and Sec. of the Ontario Beekeepers' Assoc., an estimate of 15% is made. Personally, we believe that the loss will be even heavier than that as in some localities the loss is **very** heavy.

Three weeks ago we called at a beekeeper's place in Victoria County and we saw one of the worst messes in wintering ever to come under our observation. This beekeeper, long in the business by the way, had taken solid combs of pure buckwheat from the supers last fall and transferred them to the brood nest for wintering, feeding no sugar whatever. In all hives that I saw, about one third or more of the honey in the combs had been eaten by the bees and then dysentery had played havoc. Remember that these bees had no flight for nearly five months. Out of over 80 colonies not more than ten were alive, and only two or three were any good. The beekeeper felt pretty blue and under such circumstances how could a person feel otherwise? We surely sympathized with him when he summed the situation up in three words, "What a mess". Three miles or less from that apiary we have 100 colonies and while the loss from starvation was too heavy to suit us, very little dysentery was in evidence and colonies alive are in fair condition. Of course, a lot of sugar syrup was fed there and that made the difference.

Package bees are coming in and generally they arrive in good condition. Not being familiar with the technique of putting up bees in packages, I imagine it must be a nerve-racking business in many ways. For quite a few years we have made up winter losses with packages, and once more we wish to express our appreciation for the many favors extended us by the package shippers we have done business with. Without exception we have found them obliging and reasonable.

Miscellaneous: That editorial in May Gleanings regarding Aguinaldo honey reminds me that last year the Federal Department at Ottawa objected to one of our well known and popular beekeepers advertising his honey as a health food. And then to read the claims of this Cuban honey as printed on the containers, we wonder what our Ottawa authorities think of Aguinaldo. Last week I again visited the Department store referred to in a recent issue, and we found a large fresh supply of this honey on the shelves. So it must be selling quite freely at the **same price**—$1.25 for a 9-oz. jar and $4.39 for a 3-pound jar—just think of it! ! Also on the shelves since my last visit, had been added several honeys new to me, among them were Mississippi heartsease and California lilac at 45 cents per pound, also "Heart of Maryland" tulip tree honey at the same figure. Off to one side was a half-pound jar labelled "Zitta" Acacia honey from Budapest, Hungary, and priced 59 cents. Last, but not least, was a pound-jar labelled "Vitalic Keawe honey, from Hawaii", selling for 39 cents.

Surely the most fastidious honey epicure should have his taste satisfied from this assortment.—J. L. Byer, Markham, Ontario.

XUM

MORE JUST NEWS

The Oklahoma State Apiary Association is holding its annual convention at Tulsa on June 29. A large group of interested apiarists are expected to be present for the splendid program. The two-queen colony used by D. W. Darrow is attracting statewide attention and the Round Table Discussion conducted by Prof. S. S. Orman will be unusual. Mr. Orman has a way of conducting public meetings to command respect and instruct the audience. Some of the outstanding apiarists will be on this program and discuss some of the controversial subjects in the science of beekeeping. A long list of questions are being prepared for the round-table discussion. Prof. C. E. Sanborn of Stillwater with his interesting humor will continue the "History of Beekeeping in Oklahoma". This was an outstanding number for last year's program. There will be a ladies' auxiliary organized at this meeting. Men, bring your wives, daughters, and friends. A good time is in store for all. The ladies should have a holiday from bottling honey anyway, and besides, men are not an authority on the culinary arts. Honey must be served by the dainty hands of the homemakers. There has been much interest manifested by our women.

Program

A. M.
10:00 Address of Welcome, C. R. Border
Tulsa Chamber of Commerce, Agricultural Dept.
10:15 Two-Queen Colony (Demonstration)
D. W. Darrow
President of State Apiarist Asso'n.
10:35 Round Table: Questions and Answers S. S. Orman
12:00 Lunch
P. M.
12:30 History of Beekeeping, C. E. Sanborn
Official Historian for Association
12:50 Pictures G. A. Bieberdorf
1:50 Business Meeting D. W. Darrow
Presiding
Ladies' Auxiliary
Mrs. V. B. Goshorn
Presiding
2:10 Field Trip

A meeting of the Public Relation Committee at close of the field trip is called by President Darrow and Committee Chairman.

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The 5th Annual Tri-County Beekeepers' Association field meet will be held at the City Park, Dephos, Ohio, on Sunday, June 23. Program to begin at 1 P. M. with national and state speakers. Every one invited.—Simon O. Allen, Sec.

OLDEST BEEKEEPERS' ASSOCIATION LOOKS AHEAD

The vigorous old Connecticut Beekeepers' Association begins its forty-ninth year of uninterrupted existence with the same spirit of service which stirred its founders and successive generations. Its annual Spring Meeting was held at the State Capitol, April 20th and the following officers were elected: Cyril Simpson, of South Glastonbury, President; Chas. J. Rost, 18 Lanouette St., Meriden, Conn., Secretary and treasurer; Dr. H. W. Furniss, Hartford, Director for three years.

Claude L. Yates, of Hartford, Chairman of the Jubilee Committee reported progress on plans for celebrating the Fiftieth Anniversary of the Connecticut Beekeepers' Association in 1941.

The success of the School conducted by veteran Beekeepers at Yates Apiary in Hartford was reviewed. This school promotes the purpose of the Connecticut Beekeepers' Association, whose members have generously helped the novice. It was unanimously voted to conduct the project as the Official "School of the Connecticut Beekeepers' Association", under the direction of Mr. Yates.

A. T. Henry, prominent fruit grower of Wallingford gave a most instructive talk on his experience in the use of bees in his orchards.

Prof. Crandall, of the University of Connecticut, described the progress of bee culture and explained the strange terms used by beekeepers. Mr. A. H. MacCarter, a distinguished veteran with thirty years of practical beekeeping in Northern New York State and Springfield, Mass., gave a splendid demonstration of assembling

(Continued on page 400)

The Yates apiary in Hartford, Conn., where the school for beekeeping is conducted.

Heads of Grain from Different Fields

Put on Plenty of Supers—And in Time

Last summer I had occasion to check daily a scale hive from which we extracted over 300 pounds of honey. This, of course, is not an unusually large amount. Half of this honey, however, was brought into the hive in 10 successive days. Other amateurs, like myself will profit by observing here that it would have been quite impossible for the bees to bring in 150 pounds of honey if they had only one or two supers to put it into. And so, we review the same old lesson: Put your supers on in time and plenty of them.—John Ulrich, Saranac, Mich.

[We used to put only one super on at each time we supered. During the past few years we have been putting on two each time, during a heavy honey flow. Strong colonies need an abundance of comb space for storing and ripening nectar.—Editor.]

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Non-Skid Alighting Board

On a cool or windy day in the morning or evening, I often noticed that a lot of the bees coming in with heavy loads of nectar, or pollen, would probably land near the top of the alighting board, and then lose their footing and slide or roll to the bottom. So I conceived the simple plan of covering the alighting boards with the wire screen that comes around package bees. This was cut large enough so it would fold over the edge and then fastened on with thumb tacks. And, lo and behold, the bees had a non-skid landing field. —R. A. Winkler, Tugaske, Sask., Canada.

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Leading a Trapped Skunk Slowly to Avoid Trouble

I have four colonies close to the house, and one morning last fall I found that a skunk had visited a hive the night before. That evening I set four No. 1 steel traps in front of the hive, the traps then being fastened to a 12-foot wire. I then fastened the wire to a peg so the skunk would not drag the traps away. The next morning I had my skunk and so I took the wire and led him away from the hives and shot him. If you go slowly while leading the skunk he will not leave an unpleasant odor behind. This method should work particularly well in home yards.—Bruce Bond, Monte Vista, Colo.

How Bees Improve the Fruit Crop

"Honey bees make possible, through pollination, Michigan's annual crop of fruit and seeds, exceeding $21,000,000 in valuation. . . . . In an orchard near Hart, a McIntosh apple tree was screened from bees and yielded twenty-five apples. Its nearest neighbor, forty feet away and unscreened, yielded 1200 apples. . . . . Screened sweet cherry trees have yielded 4 pounds as compared to their unscreened neighbors' yield of 44 pounds. Bees have been known to boost the yield of pear orchards from 18 bushels to almost 1000 bushels. . . . . "—Extract from Michigan Beekeeper for April, 1939.

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Queen Accidentally Confined in Cage Eventually Makes Good

An article in January Gleanings, page 38, entitled "Does Confinement in Cages Hurt Queens?" reminds me of an experience I had in 1938. I was helping a friend requeen about 30 colonies in a large yard. They were extra strong and each had at least nine good combs of brood but they were mixed bees and we were putting in good Italian queens. One of the cages had both openings in the end of the cage covered with a small screen wire. By error the cage was put in a hive without removing said screen. Naturally the bees could not release her normally. Six weeks later I was helping him again and I came across this queen still in the cage with her assistants all dead. I released her after seeing for sure she was the only queen there. I then put four freshly extracted combs in the lower chamber so she could go to work. This colony began to build up again and made the winter without help. Last spring it was one of the strongest colonies in the yard and produced over 100 pounds of extracted and was in fine condition for winter.—B. C. Taylor, Garland, Texas.

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The Bee as a Peace Emissary

A group of American youth desiring to send a gift in a South American brotherhood project sent a hive of bees. The result has been a closer fellowship, an interesting exchange of letters in English and Spanish translations and frequent orders for North America bee supplies.—Mrs. H. B. Kohr, Burbank, California.

XUM

Asked and

Answered

Closing Hive Entrances for a Few Weeks

Question.—Is it possible to close bees in for a period of ten to fifteen days during the Government spraying against the white fringe beetle in Louisiana? How should I care for them during that period?—Frank Chauvet, La.

Answer.—It might be possible to close your bees in the hives for a period of ten or fifteen days, during the spraying, if you would provide the colonies with ample ventilation, top and bottom, during the time they are confined to their hives. However, this confinement would likely retard the normal development of the colonies, because they would be deprived of nectar, water and pollen, and brood-rearing would be practically at a standstill. Furthermore, the colonies might become restless because of not being able to fly normally. In our opinion, it would be preferable to move your bees away while the spraying is being done, then return them later. Of course, the time and expense connected with these extra operations would cost considerable, and might not be warranted. It might be best to consider a new location for your bees.

Use Good Combs in Brood Chambers

Question.—I am increasing my colonies this spring by purchasing a number of hives locally which had been run for comb honey. Therefore, I did not get any drawn combs other than those in the hives. Now this is the problem: I have a number of drawn combs of my own. But having used up practically all my good combs in my own brood chambers. I have dark combs which have patches of drone cells in them. I also have many perfect combs which were drawn last year but are white as they never had any brood raised in them. Which would be better to give when the colonies need extra room for brood-raising this spring (they all are in single-story hives),—the dark combs with patches of drone cells or the white all-worker combs? Last spring I tried giving white combs to some colonies, and the queens almost quit laying rather than lay in them.—Lowell Sloat, Indiana.

Answer.—By all means use the white drawn combs consisting of worker cells, in colonies needing more comb space in brood chambers during the spring months. The queens may not lay eggs in white combs quite so readily as they do in dark combs. However, we have found that queens will utilize white combs quite readily when they need more comb space for brood rearing. It is obvious that brood chambers should consist of combs with the maximum amount of worker cells. As a matter of fact, combs consisting largely of drone cells are not so good to use in supers as are combs consisting of worker cells. It seems that bees will fill the worker cells first and will leave the patches of drone cells until the last. Good combs are an asset to any beekeeper.

Alfalfa Needs Bees for Pollination

Question.—Have you any information as to the value of bees in the pollination of alfalfa for seed?—R. I. Robinson, Idaho.

Answer.—Here is a quotation from "The Book of Alfalfa", by F. B. Coburn which answers your question: "Careful observations have been made of seed pods grown near colonies of bees and also of those so far from any bee colonies that it was safely assumed no bees had visited the fields producing the pods. In every case it was found that those from nearby fields had from 50 to 75% more seeds than the others and that they were larger and more perfectly developed. In Colorado and western Kansas, where bee culture has been greatly developed in recent years, it is found that alfalfa seed crop in fields nearest to bee colonies is much heavier and of better quality than those of fields but a few miles away." Other instances are given in this book on the value of honey bees for pollinating alfalfa and so there seems to be no question as to the advisability of having colonies of bees near alfalfa fields, for maximum seed production.

Double Brood-Chamber Management

Question.—In my locality, where the clover honey flow begins about June 7, what, approximately, would be the percentage of swarming in strong two-story colonies in which the food-chamber is kept directly above the brood chamber and below the excluder, rather than being placed above the supers during the honey-flow? I want to know whether it would be profitable to carry out special swarm prevention manipulations, such as placing the young brood above the supers during the honey flow. I provide my colonies with ample bottom and top ventilation and put on plenty of shallow extracting supers early.—Philip Clark, Michigan.

Answer.—During the past eight or ten years we have been operating a series of apiaries in western Ohio for the production of extracted honey, each colony occupying a double brood-chamber, the queen excluder placed on top of the double brood

chamber, then supers added on top of the excluder as needed. Provided supering is done in ample time, there is not likely to be much swarming. Of course, an occasional colony will swarm in spite of anything that may be done to prevent it. When swarming cells are found in the brood chamber, most of the brood is raised up into a super above the queen excluder, leaving the queen and one comb of brood and empty combs down below. This separates the queen from most of the brood, and thus stops swarming, as a rule. If you have drawn combs in your extracting supers, and if you put on plenty of supers in ample time, you should not have much swarming. If there is a good fruit bloom and dandelion honey flow in your locality, it will pay you to give supers at the beginning of this early honey flow. The bees may store some nectar in these supers, but there is usually a short dearth of nectar between dandelion and clover, during which the bees are likely to consume most of the surplus stored during the dandelion flow.

Sterilizing Bee Equipment

Question.—Please advise me as to the best and safest way to disinfect or sterilize 22 practically new bee hives and the supers that I have recently lost the bees out of due to American foulbrood.—Roy A. Robertson, Tennessee.

Answer.—We quote from Farmers Bulletin No. 1713, entitled, "The Treatment of American Foulbrood", written by James I. Hambleton, Senior Apiculturist of the United States: "Hive bodies, bottom-boards, inner covers and tops should be taken into the apiary house, thoroughly scraped to remove all propolis and wax, and then scrubbed both inside and out, with a hot soap or lye solution and a stiff brush. The scrapings should be burned and the wash water disposed of in such a manner that it is not accessible to the bees. Washing with soap and water is also the best way to remove spores from the hands, the clothing, tools and extracting equipment. Disinfectants strong enough to kill the spores are injurious to the hands. If it is not feasible to wash the hive bodies, they may be stacked seven or eight high to form a chimney, the inside walls sprinkled with paraffin and ignited. A little ventilation and fuel at the bottom of the stack will produce a hotter fire. Gasoline can also be used for this operation, but extreme precaution is necessary. As soon as the inside is scorched the fire should be smothered by placing a board over the top super. The outside of the hive bodies should then be thoroughly washed to remove all traces of honey. A gasoline blow-torch is a handy tool for scorching, but its use is rather slow."

Strengthening a Weak Colony

Question.—I have six colonies of bees, one colony is very weak. It has plenty of honey but there are not many bees. I do not want to double up the colonies. I would rather buy two or three pounds of bees and strengthen this one colony. When would be the best time to add the package bees and how should I go about it? What about the queens? Will they take care of themselves or will I have to get the old queen out before I add the package of bees? I would like to do this as soon as possible.—Otto Heil, Ohio.

Answer.—It would be a good idea to add a two-pound package of queenless bees to your weak colony. You should feed the bees in the package all the sugar syrup they will take, by painting it on the wire screen of the cage with a brush or cloth. It would do no harm to feed sugar syrup to the bees in the weak colony. Simply remove four or five combs temporarily from one side of the hive, then dump the queenless bees into this space in the hive, and allow them to unite with the weak colony. The queenless bees being filled with syrup are not likely to fight or to kill the queen in the weak colony.

The Correct Sized Food-Chamber

Question.—I desire to select a food-chamber for the standard ten-frame hive. What size and style of super would you recommend?—Raymond J. Meads, Oklahoma.

Answer.—We recommend the deep or standard super as a food-chamber. This means that the frames in the food chamber are interchangeable with the frames in the brood chamber. This, we think, is an advantage. Furthermore the double brood chamber, consisting of two standard ten-frame hive bodies is none too big for a colony when we consider the fact that comb space is needed for an ample amount of honey, an ample amount of pollen, also for brood rearing.

Keeping Royal Jelly

Question.—How long can I keep royal jelly after I take it out of the queen cells for priming cells?—Warren Stepp, Pennsylvania.

Answer.—Our Mr. Pritchard says that he has kept royal jelly in a small vial, air tight, for a number of weeks. Some queen breeders have kept jelly in an air-tight bottle for months. Apparently it does not deteriorate so long as it is kept away from the air.

Talks to Beekeepers

Editor M. J. Deyell in the apiary.

Too Busy for Wedding Anniversary

It beats all how busy we are, (or think we are) nowadays. Some of us, I fear, (and this applies especially to beekeepers during the height of the season) may run around in circles without accomplishing a great deal. We should, occasionally at least, take enough time out, to ask ourselves just what we are trying to do, and why. We should plan our work, then work our plan. Even then we sometimes start going round and round.

Two years ago this summer, during a very heavy honey flow in Western Ohio, I found myself running around in circles, too busy to be sociable with my family. That is bad. On June 30 I worked hard all day checking and supering comb honey colonies. See my article page 359 this issue for details. Nectar was pouring in. Queen cells were found. More supers were needed. I was 75 miles from Medina so decided to remain in Western Ohio that night, in order to complete the work next day.

About six o'clock that evening I called my wife long distance saying that I wouldn't be home until next day. She said, "Do you know what day this is?" I replied, "Isn't this our wedding anniversary?" She said, "Yes, it is, and the girls have a nice dinner all ready and waiting for you."

It really was too bad. The family haven't yet forgotten the incident. Such is the life of a beekeeper.

Will We Beekeepers Ever Learn?

In my talk of a year ago I mentioned losing some perfectly good colonies due to a shortage of stores and my negligence. This spring I found one of my colonies in a small yard had starved. On opening the hive I found a large cluster of dead bees filling eight spaces between combs which contained no honey. I recall that this colony was somewhat light last fall. I should have fed it, but didn't. Some of us take too many chances in wintering bees.

This past winter was one of the severest on bees since 1935-'36. The dry fall of 1939 with a pollen shortage in some areas of the North worked a hardship on bees.

If and when beekeepers learn to reserve for each colony a full-depth body of combs a food chamber crammed full of honey and pollen in addition to what honey and pollen there may be in the bottom brood chamber and to have each colony headed with a good queen, winter losses, barring unfavorable conditions will be negligible. Many colonies this past winter ate all the honey on the combs they occupied and due to protracted cold spells were unable to move laterally onto honey in combs at the sides of the hives. It is very necessary that combs in food chambers be well filled with honey so that there may be no danger of clusters of bees reaching the top bars before spring. Clusters can move upward slowly during cold spells of weather but they cannot move laterally unless the weather moderates sufficiently to permit the cluster to move sidewise.

A Handy Method of Gorging Package Bees with Syrup before They are Put into Hives

This method should perhaps have been described in the May "Talk" but we didn't run onto it until recently. The importance of gorging bees with warm syrup is being emphasized more than ever before. The usual method of painting syrup on wire screens of bee cages with a brush or rag is too slow.

The method I am about to describe is faster. The other day a helper and

I gorged 30 packages and put them into hives in two out apiaries in a little over two hours.

A wash tub is all that is needed. Place two sticks across the tub. Lay the package, or packages, up to seven or eight in number, flatwise across the two sticks, piling the cages squarely on top of each other in a straight pile. Then pour warm syrup, made of equal parts of water and granulated sugar, (about four or five quarts of syrup) slowly through the pile of bee shipping cages. The tub below catches the drip of syrup. The bees will become gorged with syrup and be in good condition to be installed in hives. Thoroughly gorged bees are not likely to abscond from hives.

What to do with Granulated Combs of Honey

Many beekeepers who have lost bees this past winter are asking what to do with combs of honey, partially or wholly granulated in hives in which colonies have died. Packages of bees should be put into these hives in order to utilize the honey and save the combs from bee moths. Packages installed in early June may build up in time to store some surplus. Prospects are quite favorable for a crop in the North.

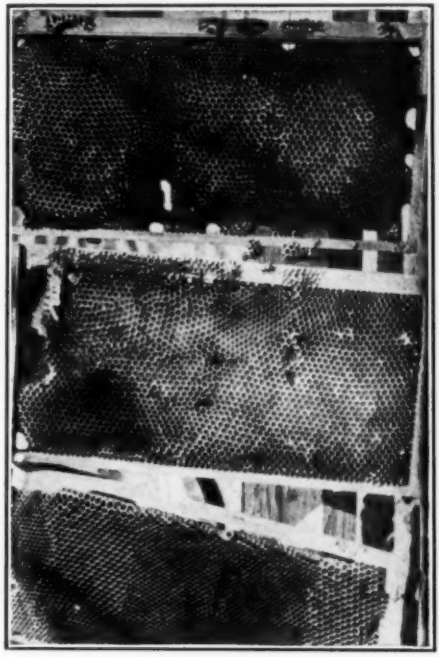
Apiary Management During June

In most of the Southern states some surplus honey has already been stored. In the North the season is later than usual and the main honey flow will begin sometime during this month.

Two requirements, **Food** and **Comb Space** are important. The first, **Food,** needs to be stressed right up until the main honey flow has really begun. Populous colonies consume a great deal of honey in brood rearing. Frequently a rainy spell of weather just prior to the main flow may keep bees in for a few days. Under such conditions colonies short on stores may starve. An abundance of honey for each colony is needed for safety.

The Beekeeper Who Fed 7000 Pounds of Sugar in May

A few years ago during the last week in April I visited a 700-colony commercial beekeeper (somewhere considerably north of the Mason-Dixon Line). This beekeeper didn't believe in the food chamber hive and didn't hesitate to tell me so. He wintered in single-story ten-frame standard hives. His region gave a late aster honey flow that enabled bees to fill the brood chambers almost "plumb" full, so he said.



Combs like these should be cut out and rendered into wax.

Well, at the time I called on this beekeeper the dandelion flow was due to begin. The country-side was yellow with bloom. He said that his bees would easily gather enough from fruit and dandelion to carry them up to the clover flow.

But something happened. A long cold spell of weather set in. During May the bees were kept in their hives most of the time. Food in the hives began to disappear. Colonies dwindled due to a shortage of honey and pollen.

During the last week in May I happened to meet this beekeeper. I noticed he wasn't very happy. I said, "By the way, how are your bees coming along?" He said, "Jack, I had to feed 7000 pounds of sugar".

Think of the cost of sugar and extra labor involved in feeding sugar syrup. A deep food chamber of honey for each colony, in addition to the honey in the bottom brood chamber would have solved the food problem, and, incidentally, it would have insured a larger reserve of pollen for brood rearing.

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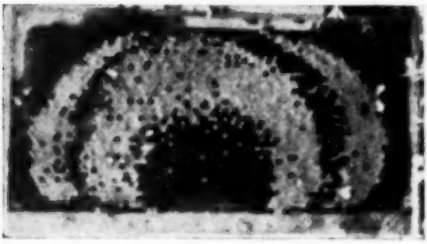

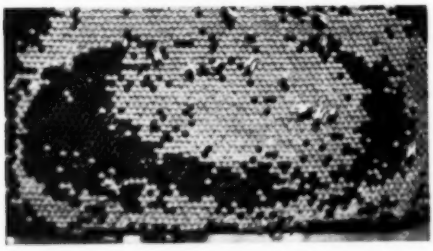

Combs like these are valuable for brood chambers.

Comb Space Important

This simply means supplying an ample amount of supers, a little in advance of the time they are actually needed. Liberal supering tends to avoid congestion within the hives, and this in turn controls swarming, because congestion is said to be the prime cause of swarming.

The average beekeeper may not realize how much comb space is needed by a very populous colony for the storage and ripening of incoming nectar. It is not uncommon for a very populous colony, during a heavy honey flow to store fifteen or twenty pounds of surplus honey in a day. In 1938 a big colony in Michigan stored 737 pounds during the season. On July 6 the scale hive showed a gain over the previous day of 36 pounds. See the article by R. H. Kelty, page 427 of July, 1939, Gleanings for details.

According to work done by the Pacific States Bee Culture Laboratory at Davis, Calif., on "Nectar Concentrations", (see page 206, April, 1939, Gleanings) the average sugar content of nectar is 25 to 30%. If the average is 30% this means that nectar is approximately 70% water and that bees have to handle approximately 266 pounds of nectar in the production of 100 pounds of honey. On the basis of, say, 15 pounds of surplus gathered by a strong colony in one day, this amount of honey would fill three standard extracting combs. The nectar required to produce this amount of honey would, directly after being carried into the hive, easily fill nine combs, or a deep super. If we take time to give this matter of **comb space** the consideration it deserves we will realize that hundreds of tons of honey are lost annually because beekeepers fail to give an ample amount of super room in time. When supering out yards we put on two deep supers at one time, instead of one, during a good honey flow and we aim to super liberally a little in advance of the time supers are actually needed.

We super on top in extracted honey production, mainly because this method saves an enormous amount of labor. Top supering may not work in all localities. See the article in this issue, page 353, entitled, "Supering for the Flow", by C. B. Gooderham.

A Word About Combs

Some years ago while keeping bees commercially in Northern Michigan I met a beekeeper who tried to save money by using half sheets instead of full sheets of comb foundation in brood frames which were wired. The bees built drone comb in the lower halves of the frames and this resulted in an abnormal amount of drones.

Good combs consisting of worker cells are very valuable. This is a good time to remove undesirable combs from brood chambers and replace them with good combs, or if such are not available, with frames containing full sheets of foundation. Good combs consisting mainly of worker cells give queens an opportunity to produce populous colonies of worker bees. Such colonies properly managed will store the maximum crop of surplus and this is what all beekeepers are, or should be, interested in.

American Honey Institute News Notes

Requests are coming in daily for the leaflet of recipes that fits the cover of a five pound pail. This leaflet will help boost your honey sales. It is perhaps one of the most practical leaflets that has been offered to the industry. Do get in on the first of these.

• • •

Urgent calls have been received at the office asking where honey can be bought. It is May first and one man wants 100,000 pounds immediately.

• • •

A Queen has been crowned to rule the World's Fair Bees. The New York World's Fair Queen Bee travelled by air and is now getting accustomed to her new hive at the museum building of Brooklyn.

• • •

On May first sixty four new members had been added to the 1940 Who's Who List in American Honey Institute.

• • •

Would you like to have the Institute include a list of Honey Buyers in the 1940 Directory?

• • •

Keep Honey before the public during the summer months by purchasing the new window streamer "More Refreshing Summer Drinks flavored with Honey". There is a picture of a jar of honey and a glass containing a refreshing drink on this streamer. The colors are green and white. Send a three-cent postage stamp for a sample streamer or twenty-five cents for one dozen.

• • •

By the way, the leaflet for the cover of a five pound pail contains no useless recipes. The leaflet has recipes, for Baked Apples, Honey Cinnamon Toast, Honey Angel Food, Pumpkin Pie, Baked Ham, Refreshing Party Drink, and other recipes, besides a page on Things you Should Know about Honey. If you like this folder and want us to prepare one for the cover of a ten pound pail we shall be pleased to do so.

• • •

The June issue of Practical Home Economics will contain a large quantity recipe furnished by American Honey Institute for Honey Nut Bread.

• • •

Ladies, when your husband sends in his 1940 membership remind him to ask for Ann Eggelson's formula for tissue cream. You have two of the ingredients of this formula, beeswax and honey and can with a little practice make this lovely tissue cream.

• • •

You will want to order the "Just Arrived New Season's Honey", window streamer. We haven't many left. They are twenty-five cents per dozen. The Honey for Breakfast Streamers are the same price and good the year round.

• • •

June Hint: Would you like a Honey Sales Hint each month? Here's one for June. Plan a gift box. The box may be a Honey Recipe Box. Place one or two jars of honey in this box. If this proves popular the Institute will be pleased to publish recipes on cards to fit the box.

Bees Like Shade

Some shade for bees appears to be an advantage, especially during the hot summer months. This shows part of an apiary belonging to W. A. Coulter, Columbus, Ohio.

XUM

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 10th of month preceding.

HONEY FOR SALE

FOR SALE—Fine clover honey. John Sueper, Jewell, Iowa.

WHITE CLOVER and light amber. Lewis Klaty, Carsonville, Mich.

NEW CROP clover extracted honey. H. E. Crowther, Cass City, Mich.

FINE clover honey, case or car. Leslie A. Davis, R. R. 2, Union City, Ind.

FANCY clover honey, case or quantity. E. J. Stahlman, Grover Hill, Ohio.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY—Light and light amber extracted. F. W. Lesser, Fayetteville, N. Y.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

FRANK RASMUSSEN, Greenville, Michigan. Fancy comb and extracted honey.

CHOICE clover honey in 60's. R. C. Bish, successor to Moore Apiaries, Tiffin, Ohio.

NEW CROP holly blossom honey packed in sixties. Harry Spooner, Stephens, Ark.

BEST clover extracted. New 60's, case or ton lots, 6c. Irvin VanDevier, Medina, Ohio.

GOOD CLOVER extracted in sixties, 6c; light amber, 5½c. H. G. Quirin, Bellevue, Ohio.

FINEST QUALITY amber or buckwheat in new 60's, $3.00. Clayton Wright, Brocton, N. Y.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

CHOICE clover-basswood and light amber honey in new 60's. Noah Bordner, Holgate, Ohio.

ORANGE, palmetto and mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

FOR SALE—9 tons of finest clover extracted at 6c. F. O. B. Bellevue, N. B. Querin, Bellevue, O.

CHOICE clover honey, new cans. Case, $7.20. Sample, 10c. Martin's Apiaries, Oswosso, Mich.

LIGHT and amber honey in sixties and 5-lb. pails. Carl Holcomb, 1913 Francis Ave., Troy, N. Y.

CLOVER CUT COMB. Pure clover extracted honey in 5's or 60's. George Eykamp, Cuyahoga Falls, Ohio.

MICHIGAN White Extracted in 60's. Strictly high grade in new cans. M. H. Hunt & Son, Lansing, Mich.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

HONEY FOR SALE—All kinds, any quantity. H & S Honey & Wax Co., Inc., 265-267 Greenwich St., New York, N. Y.

FANCY white clover extracted honey, can or carload. Price on request. Sample 15c. Jos. H. Hoehn & Sons, Ottoville, Ohio.

LET US show you how you can save on your honey purchases. We also buy honey. H. Blitz, P. O. Box 3452, Philadelphia, Pa.

COMB HONEY sections, $7.50 per thousand. Good quality. 500 samples, $3.75. Charges collect. Harold M. Case, Pierpont, Ohio.

COMPLETE line comb and bottled honey, pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

SELECT LOTS white sweet clover, also processed white honey in 60-pound tins. A. I. Root Co., 224 West Huron Street, Chicago, Ill.

CHOICE white sweet clover, also extra light amber honey in new 60-pound tins by the case or carload. Dadant & Sons, Hamilton, Illinois.

EXTRACTED HONEY—White clover, 6½c; light amber, 6c; amber, 5½c; buckwheat, 5c; granulated comb honey, cheap. C. B. Howard, Geneva, N. Y.

4 CASES Western Pennsylvania's finest buckwheat honey, 5½c lb. Unexcelled for quality. Free from foreign matter, clear tasting. Sample 10c. W. D. Ames, R. 7, Erie, Pa.

HONEY PACKERS—Write us for prices on carload lots of California and western honeys. We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, California.

WHITE sweet clover extracted in new sixties. One can or a carload. Extra good quality and the price is reasonable. Sample 20c to apply on order. Harry C. Kirk, Armstrong, Iowa.

WE STIILL have best Michigan clover honey to supply our customers until the new crop is ready in July. New cans and cases. E. D. TOWNSEND & SONS, Northstar, Michigan.

RASPBERRY HONEY blended with clover honey in 60-lb. cans for $4.00 a can; 10-lb. cans postpaid for $2.00 a can. Sample by mail, 20 cents. Elmer Hutchinson & Son, Lake City, Mich.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O. D. terms except when the buyer has thoroughly established his credit with the seller.

WANTED—White and light amber extracted honey. George Eykamp, Cuyahoga Falls, Ohio.

WANTED—White clover honey. New cans only. Clover Blossom Honey Co., 712 Kossuth St., Columbus, O.

WANTED—Carlots honey; state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

HIGHEST cash returns made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Ky.

CASH PAID FOR carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wis.

WANTED—White and amber extracted Honey, any quantity, also Beeswax. Write The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Apiaries, 12243 12th St., Detroit, Michigan.

FOR SALE

SINGLE comb extractor. Used once, perfect condition, $8.00. Meda Weigand, Merrimac, Wis.

QUEENBEE PAINTING outfits, $1.00 postpaid. Southwick Apiaries, Waban, Massachusetts.

ONTARIO AGRICULTURAL COLLEGE honey strainer. Fine condition. Write for particulars. Lavern Depew, Auburn, N. Y.

25 ROOT standard hive bodies and 225 standard extracting combs. Guaranteed free from disease. Noah Bordner, Holgate, Ohio.

CUT COMB HONEY—Cartons and equipment. Get our prices on everything for cut comb honey. James Hilbert, Traverse City, Michigan.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

ATTRACTIVE prices on bee supplies and comb-foundation. Send for catalog. Saves you money. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

READY WIRED FRAMES—Scientifically correct wiring results in perfect combs reduces swarming 75%. Literature free. Sample 10c. A. E. Wolkow, Hartford, Wis.

COMB FOUNDATION at money-saving prices. Plain, wired and thin section. Wax worked at lowest rates. Comb and cappings rendered. E. S. Robinson, Mayville, N. Y.

YOUR WAX worked into high quality medium brood foundation, 15c pound; 100 pounds, $10.00. Thin super, 22c; 100 pounds, $18.00. Medium brood, 10 lbs., $4.50. Fred Peterson, Alden, Iowa.

CARTONS for cut Comb Honey. New attractive designs with your name and address. Low prices. Fast service. Samples on request. May Carton Co., Box 257, Traverse City, Michigan.

FOR SALE—Fine quality queen mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

CAUCASIANS

Extra gentle, prolific, long tongue, little inclined to swarm, dependable workers,—10% to 40% ahead of Italians. Foundation stock from mountainous region of Terek, Caucasus.

CARNIOLANS

Prolific at all times, very gentle, best of winterers, build beautifully white combs, most excellent workers. My Carniolans were used in the recent Iowa Experiment Station test showing Carniolans best for Northern and Western conditions. Have supplied many other Agricultural Colleges and Experiment Stations with them. 33d year with them. Ask for free paper telling more about both races.

Prices: Untested queens, 1 to 5, 60c each; 6 or more, 50c each. Tested, $1.00 each.

ALBERT G. HANN
Glen Gardner, New Jersey

QUALITY
PACKAGE BEES AND QUEENS
HURRY

Let us fill your last-minute orders with Ideal Package Bees and Queens.

Full-weight — Young queens — Prompt service — Satisfaction Guaranteed.

2-lb. package with queen $1.50
3-lb. package with queen 1.85
Mated Italian queen ..... .30
(No discount on above prices.) F.O.B.

The Ideal Apiaries, Wiggins, Miss.
—Prices net—Payable in U. S. Funds—

MOTT'S NORTHERN BRED ITALIANS

Thirty-fifth year rearing from this strain. Package bees, 2-lb., $2.45; 3-lb., $3.15, with loose queens. From my branch in Alabama. May queens, $1.00; 3, $2.50. June, July, $1.00; two or more, 75c each; 50, 70c; 100, 65c. Fair to good breeders, $2.00, $3.00 and $5.00.

Satisfaction guaranteed.

E. E. Mott, Glenwood, Mich., U. S. A.

Good Italian Queens

That pay their way.

SUMMER PRICE, ...35c each
3 for $1.00

D. W. HOWELL
Shellman, Georgia

QUEENS and PACKAGE BEES

Three-Banded Italians

Two-pound pkgs. with queens, . .$2.00 ea.
Three-pound pkgs. with queens, . 2.50 ea.
QUEENS: 1 to 9, 45c ea.; 10 to 49, 40c ea.; 50 to 99, 35c ea.; 100 or more, 30c ea.
All queens personally reared and are Select Untested (Guaranteed pure mated).

The Crowville Apiaries
Winnsboro, Louisiana
J. J. Scott, Prop. Rt. 1.

QUEENS BY RETURN MAIL 35c 3 FOR $1.00

BRIGHT 3-BANDED ITALIANS

Play safe. Requeen with NORMAN BROS. bright 3-banded Italians, selected honey-gathering strain. You can depend on them. They will make colonies you will be proud of. These queens are reared during a nature honey flow, making them large in size. You make no mistake in purchasing some of these queens. Safe arrival, health certificate, satisfaction guaranteed.
2-lb. pkg. with select queen $1.40
3-lb. pkg. with select queen 1.75
Package F.O.B. Express Collect.
NORMAN BROS. APIARIES
Ramer, Alabama

"She-suits-me" queens, 3-banded Italians, most excellent strain: One queen, 75c, 3 queens, $2.00. Stamps accepted for single queen.
Koolairy veil, $1.50 postpaid, SAFIN queen cage, $1, for ten; 15c for one.
ALLEN LATHAM
Norwichtown, Conn.

Palmetto Quality Queens

are three-band Italians of highest quality. Prices: three for $1.00 in lots of nine; 30c each in lots of more than nine. If your orders amount to 100 queens for balance of season after June 1, the price will be 28c each. No disease, and a square deal.
C. G. ELLISON & SONS
Belton, S. C. Rt. 2.

FOR SALE—400 5-gal. honey cans. Used once. Best offer. J. J. Gielow & Sons, Inc., 4189 Cabot Street, Detroit, Michigan.

25 COLONIES BEES for sale. Guaranteed no disease. Make engagement weekends. W. J. Brooks, Box 161, Sherburne, N. Y.

REAL PETS—Brown's Stingless Bees. Good honey gatherers, non-swarmers. Season's price, $1.00 for a queen, over 10, 90c each. Brown's Apiary, Cape May Court House, N. J.

PINARD nailless queen cage. Agents: Diamond Match Company, Los Angeles and Chico, California; Weaver Apiaries, Navasota, Texas. Samples. A. B. Pinard, 810 Auzerais Avenue, San Jose, California.

SAVE MONEY by letting us work your wax into wired or regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices, as we have no agents. Walter Kelley Co., Paducah, Kentucky.

COMPLETE LINE of quality bee supplies at factory prices. Also, send us a sample and let us quote you price on your honey and wax. Alexander Company, Reynolds Road near Dorr St. Route 3. Toledo, Ohio.

FOR SALE—We accumulate bee supplies at our warehouses, slightly shopworn and fully serviceable, but discontinued for lack of sale. Write for complete bargain list. G. B. Lewis Company, Watertown, Wisconsin.

BEES AND QUEENS FOR SALE

ITALIAN QUEENS. W. G. Lauver, Middletown, Pa.

ITALIAN QUEENS, untested, 50c. White Pine Bee Farms, Rockton, Pa.

ITALIAN queens, three-banded, after June 1st, 50c each. Robert B. Spicer, Wharton, N. J.

ITALIAN queens. N. J. Experiment Station stock, selected, carefully reared, 75c each. Circular. E. G. Carr, Pennington, N. J.

QUEENS with character. The best that can be produced. Shipped when you want them. At a price you can afford to pay. 20 years' experience. D. P. Green, DeLand, Fla.

GOLDEN QUEENS, excellent quality. Hardy, gentle, productive, health certificate. Satisfaction guaranteed. Untested, 50c, tested, $1.00. O. E. Brown, Route 1, Asheboro, North Carolina.

CAUCASIAN package bees. Queens for June: 2-lb. package, $1.75, 3-lb. package, $2.25. Untested Queens, 50 cents each. Safe arrival guaranteed. Lewis & Tillery Bee Co., R. 4, Box 132, Greenville, Ala.

CHOICE light three-banded Italian queens, 35c each, in lots of 10 on up: 1-9, 40c each. 1 2-lb. pkg. with queen, $1.40 each; 1 3-lb. pkg. with queen, $1.75 each. Live delivery guaranteed. T. A. Plauche, Hamburg, La.

CHOICE BRIGHT Italian queens that are a pleasure to work with. The stock has been bred and selected in the North the past 36 years. For good winterers, hustlers, and gentleness. Price 75c each and $8.00 a doz. Emil W. Gutekunst, Colden, N. Y.

EARLY PACKAGE BEES—Prompt shipment begins May 1. Two-pound package bees and queen, $2.45; 3-lbs., $3.15. Add 25c postage for each package. Choice Italian queen, 75c. Safe arrival guaranteed. Birdie M. Hartle, Reynoldsville, Pa., Box 363.

THREE THOUSAND five-gallon cans in cartons, used once. Greulick & Son, Scotia, N. Y.

FOR SALE—Empire State strain Italians. Bred for honey production, 50c each. Coggshall & Son. Groton, N. Y.

CAUCASIAN Package Bees and Queens. 2-pound package with queen, $1.50; 3-pound package with queen, $2.00. Queens, 40c each. P. B. Skinner, Greenville, Ala.

EXTRA YELLOW Italian queens, that produce bees a little more yellow than three-banded; more gentle and just as good workers. Untested 50c each; tested $1.00 each. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, N. C., Route 2.

NORTHERN BRED Leather-colored queens, 35c, 3 for $1.00. We cooperate with honey producers in selection of our breeding queens and believe our stock to be as good as the very best. For prompt service and good queens send your orders to Diemer Bee Co., Liberty, Mo.

THE NORMA ROY APIARY—Italian bees with queen introduced, 2 pounds with queen, 1 comb brood, $2.00; 2 pounds with queen, 2 comb brood, $2.40; 3-pounds with queen, 1 comb brood, $2.50; 3-pounds with queen, 2 comb brood, $2.90. A health certificate with shipment. Norma E. Roy, Hessmer, Louisiana.

Quality 3-band Italian bees and queens. Carefully reared queens from northern production tested stock. Line-bred for honey-gathering, gentleness, prolificness and beauty. Queens, 35c each. 2-lb. pkg., with queen, $1.50 each; 3-lb. pkg., $2.00; 4-lb. pkg., $2.50. Combless or with comb. Satisfaction guaranteed. Health certificate from Department of Agriculture furnished. A. D. St. Romain Apiaries, Diamond, La.

GOOD COMBLESS PACKAGE BEES AND QUEENS. Gentle, prolific, well-bred, three-banded Italians. Used for years by leading beekeepers of the U. S. and Canada. Many outstanding records for honey production. New cages—Full weight packages—No drones—No disease. 2-lb. pkgs. with select young laying queens, $2.45 each; 20 or more, $2.30 ea.; 50 or more $2.15 ea.; 100 or more, $2.00 ea.; 3-lb. pkgs. with queens, $3.15 ea.; 20 or more, $3.00 ea.; 50 or more, $2.85 ea.; 100 or more, $2.65 ea. Express or mail, f.o.b. here. Select young laying queens, 75c each; 20 or more, 70c ea.; 50 or more, 65c ea.; 100 or more, 60c ea.; Postpaid. Order now and have your shipping date reserved. Price list on request. H. C. Short, Fitzpatrick, Ala.

MAGAZINES

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly 7c6d. Apply Editor, Indian Bee Journal. Jeolikote, Dist. Nainital, U. P. India.

MICHIGAN BEEKEEPER. The State Bee Magazine with a National Circulation. 75c a year, 2 years $1. Send 10c for single copy. MICHIGAN BEEKEEPER, R.F.D. 3, Lansing, Mich.

MINK, NUTRIA, FOX, RABBIT raising profitable. Send dime sample copy magazine telling how. Fur Trade Journal, Box 31, Toronto, Canada.

DAIRY GOATS

DAIRY GOAT JOURNAL, Dept. 419, Fairbury, Nebr. (big monthly magazine, 3 years $1), gives complete information. Introductory 5 months, 10c.

PRICE
After June 1st

1—2-lb. pkg. with queen, . . $1.35 ea.
1—3-lb. pkg. with queen, . . 1.70 ea.
Young laying queens, ...40 ea.

W. O. GIBBS
Willacoochee, Ga.

Strong Nuclei

Two-nuclei in newly painted, ten-frame hive bodies, each of four combs bees, with hatching brood, honey and 1940 laying queen, $3.15 each nuclei. Our hive bodies have a sliding partition through the center, with screen wire top and bottom. Queens are loose and laying on arrival. Can ship any time you say. No disease.

WM. PIEFER & SONS
GAUSE, TEXAS

Queens 35c; 3 for $1.00

By Return Mail

Bright 3-Band Italian Bees and Queens of highest quality. Purely mated, safe arrival and satisfaction guaranteed. Packages express collect. Health certificate furnished.

2-lb. pkg. with Queen $1.35
3-lb. pkg. with Queen 1.75

JOHN A. NORMAN
Rt. 2, Box 38. LaPine, Ala.

Package Bees and Queens

Bright Three-banded Italians. Well improved stock. If you want the very best in bees that money can buy. A trial order will convince you that our loose queen package, prompt and safe delivery, is just what you have wished for.

2-lb. pkg. with queen, $1.75; 3-lb. pkg. with queen, $2.25; Queens, 50c each.

TAYLOR APIARIES, LUVERNE, ALA.

THE BEE WORLD—The leading journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership in the Club, including subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

XUM

Mountain Gray Caucasians

50c each for June and later

17 years ago we couldn't buy this quality Caucasians at any price (in this country). Send your orders to us. We are running three large mating yards.

Service and bees guaranteed.

BOLLING BEE CO., Bolling, Ala.

The Best Only

We produce bees and queens of the highest quality. You will be satisfied if you send us your orders.

2-lb. pkgs. with queens, ..$1.50 ea.
3-lb. pkgs. with queens, .. 2.00 ea.
Selected untested queens, .. .40 ea.

N. B. SMITH & COMPANY
Calhoun, Alabama

If You Want Your Bees When You Want Them

Send your orders to us. We feature a 24-hour service.

Queens balance of season, 40c each.
Quantity lots, 35c.

Sullivan, Wright & Co.,

Gilbertown, Alabama

Look---Three-Banded Italian Bees and Queens

They are real honey-getting bees. They are gentle and easy to work with. A trial order will convince you. Satisfaction guaranteed. Write for prices.

ALAMANCE BEE COMPANY
Geo. Elmo Curtis, Mgr. Graham, N. C.

EXTRACTORS FOR SALE

FOR SALE—Good used Root 4-frame Automatic Reversible Extractor 9½" pockets? M. Adermann, Manvel, N. D.

FOR SALE—Root 20-fr .Simplicity like new. $60. Root-Cowan 2-fr. slip gear, little used $12. Briggs Stratton 1-H. P. Gasoline motor with gear reduction like new $35. Fred D. Lamkin, Union Springs, New York.

TOO LATE TO CLASSIFY

WANTED—Power extractor, Root automatic, or Simplicity preferred. State condition. Forest Coulter, Goldfield, Iowa.

FOR SALE—12 2-story 10-fr. colonies, guaranteed free from disease, $6.00 each. Otto Metz, 531 W. 135th St., New York City.

FOR SALE—Queens. Fancy Goldens, 60 cents. Famous leather backs and Caucasians, 50 cents. Write for quantity prices. Guilford Apiaries, Guilford College, N. C.

Honey Labels

30 Designs

• • •

Write for Catalog.
Order now before big season's rush starts.

• • •

THE A. I. ROOT COMPANY
MEDINA, OHIO

Shaw's Three-Band

ITALIAN QUEENS

Are reared nature's way where queen rearing has reached the peak often sought after but rarely attained.

Every one as good as the best.
Price, 40 cents each.

Package bees:
2-lb. with queen, ...$1.60
3-lb. with queen, ... 2.20

Queenless packages, deduct price of queen.

A. E. Shaw

Shannon, Miss.

Popular Low Prices on Package Bees, Queen Bees

Berry's Reliable Italian Bees After 45 Years of Selective Breeding

—Prices for June—

	Each		Each
2-lb. pkgs. with queens, 1 to 10,	$1.55	10 or more	1.50
3-lb. pkgs. with queens, 1 to 10,	2.10	10 or more	2.00
Additional pounds of bees, ea.	.50		
Untested queen bees, 1 to 10,	.55	10 or more	.50
Tested queen bees, 1 to 10,	1.05	10 or more	1.00

Safe arrival and satisfaction we guarantee. Directions telling how to handle and a Certificate of Health accompany each shipment. Wings of queens clipped on request.
The South's Oldest Active Shippers of Package Bees.

M. C. BERRY & COMPANY, Box 684, MONTGOMERY, ALABAMA

Tennessee Quality Queens

Hardy three-banded Italians, grown direct from eggs just as Nature intended. These queens are large, very prolific, and great honey producers.
Will send you choice select queens that you will be proud to have head your colonies. A trial order is invited just to show you that there is a difference.
Price, 50 cents per queen, any number.

L. E. Smith
Hollow Rock, Tennessee

BRIGHT AND VIGOROUS Three-Banded Italian Bees and Queens

Cheap as money can buy.

2-lb. pkg. with queen, ...$1.40
3-lb. pkg. with queen, ... 2.00
Queens, each ..$ .35 3 for 1.00

HOMAN BROS., SHANNON, MISS.

Select Italian Pkg. Bees & Queens

Young bees. No drones.
Prompt Shipment. Satisfaction and safe arrival guaranteed.
Get orders to us by June 20th.
—Prices to June 20th—

2-lb. with young queen $1.40
3-lb. with young queen 1.75
Select queens ..... .45

R. B. Herier, Valdosta, Ga.

PERFECT COMBS on Schmidt's Economy Foundation

Try it and see for yourself.
Send for our price list.

Oscar H. Schmidt and Sons
Makers of Schmidt's Economy Foundation
Rt. 4, Bay City, Mich.

→ Hello, Folks ←

STEVENSON'S LINE-BRED GOLDENS ARE THE BEES AND QUEENS YOU NEED.
We are wonderful!
Write to STEVENSON'S APIARIES, WESTWEGO, LA., for circular.
2-lb. pkg. with queen, $1.90; 3-lb., $2.50. Queens, 50c; tested $1.25.
Discount on 10 or over.

BEEKEEPERS ITEM

Serving the beekeeping industry for a quarter century without bias or prejudice. "The forum for the thoughtful." One year, $1.00; two years, $1.50; sample copy, 3c stamp.
With Gleanings it provides a combination that covers the beekeeping field.
Both magazines for one year, $1.75.
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XUM

Don't Be Misled

Quality, Service and profitable returns cannot be had from packages at unreasonably low prices.

Imported Italian Bees

produce more surplus and require less honey for wintering than other strains. Give us a chance to prove our claims by purchasing your supply of

Package Bees from

Rossman & Long

Box 133 **Moultrie, Ga.**

Prices

2-lb. packages, $1.70; 3-lb. packages, $2.25. Loose queen packages, add 15c each. Nuclei with one frame brood, add 30c each.

Above prices to be in U. S. Money or its equivalent.

We are Prepared to Ship Promptly Your Rush Orders

Root QUALITY
BEE SUPPLIES

Ample stocks are added to daily by our large factory force.
98% of orders are shipped the same day they are received.

Use this "Direct from Factory" Service.

The A. I. Root Co. of Iowa

Council Bluffs, Iowa

STOP LISTEN LOOK

STOP wasting money on inferior packages.

LOOK at the results others are getting from Cutts' packages, LISTEN to reason. Only good quality packages pay profits. Poor packages are expensive at any price.

	2-lb. with queen	3-lb. with queen	Untested queens
1-25	$2.10	$2.75	$ .50
25-100	1.95	2.60	.45
100-up	1.85	2.45	.40

J. M. CUTTS & SONS
Rt. 1. Montgomery, Ala.

For Sale---Pure Italian Bees

and queens. Nothing but the best.
Queens, 35 cents each.
Pound of bees at a new low price.
You send for them, they go.
GRAYDON BROTHERS, Greenville, Ala. Route 2.

Three-Banded Italian Bees

2-lb. Standard Comb Pkg. with queen,	$1.60
Combless Pkg. with queen, ...	1.40
2-lb. M. D. Comb Pkg. and queen, ..	2.00
Untested queen, ...	.40

Satisfaction Guaranteed.

J. P. CORONA, P. O. Box 124, Kenner, La.

EDWARDS METAL ROOFS

Look better, last longer, cost less. Protection from fire, lightning, wind and weather. Send roof measurements today for money-saving price, freight paid. Ask for Catalog 89-G.

THE EDWARDS MANUFACTURING CO.
633-683 BUTLER ST. CINCINNATI, OHIO

Attention Producers!

throughout U. S. and possessions. Would you like to receive a bonus for your extracted and comb honey? Write for particulars.
H. BLITZ, P. O. Box 3452, Phila,, Pa.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

JUST NEWS

(Continued from page 372)

"The Two Queen System", Dr. L. C. Farrar. "The American Honey Institute at Work", Harriett Grace. "Use of Honey in The Home and in Children's Diet"; Mrs. J. L. MacDonald. "Selling the Crop", M. J. Deyell. Contests: Honey Nut Bread; Honey Show; Question Bee; Drone Race; Bee Caging; Queen Finding; Hive Nailing for Women. Features: Loud Speaker System (Possibly a Broadcast), Newport High School Band. (40 pieces), The Newport 4H Bee Club's Modern Queen Yard in Operation, A Magician and a Black Face. Two-Queen System and Resistant Stock in Practice, 250 pounds of Wabash Valley Cat Fish.—L. R. Stewart.

• • •

Dr. C. S. Bisson of the Pacific States Bee Culture Laboratory at Davis, Calif., passed away March 13, 1940. Dr. Bisson was held in high esteem and was one of the best and most able cooperators the Bee Culture Laboratory ever had. He was interested not only in beeswax but in several other phases of the work, viz., pollen and the chemistry of nectar.

• • •

Samuel Dawson Smith of College Place, Washington, one of the largest beekeepers in the state also a member of the State Association died recently.

• • •

The home and experimental apiary of Mr. Ralph Wittal, 2931 East 120th Street, Cleveland, Ohio, will be the meeting place of the Cuyahoga County Beekeepers' Association, Sunday, June 16, at 2:00 p. m. All beekeepers are cordially invited. Educational demonstrations which will be a part of the program.—J. M. Miller, Sec'y.

Italians Caucasians

QUEENS

Large, vigorous, "good lookers" and good producers.
If you want that kind of queens get your check book.
50 cents each, 25 to 50, 45 cents; 50 or more, 40 cents each.

WEAVER APIARIES
Navasota, Texas

It Pays Big

to add our Booster Packages to those under-par colonies. Colonies with poor queens can yet be made producers by killing those worthless queens, and uniting our regular packages with the BEST QUEENS we have ever produced, to them.
We wish to take this opportunity to thank all of you who favored us with your orders which enabled us to move our output to the extreme limit of our capacity throughout the entire package season. Every package of bees and every queen shipped was of our own production, and we feel a sense of pride in our Record of "Delivery on Time".

Summer Prices:	2-lb. pkgs. with Queens.	3-lb. pkgs. with Queens.	Queens.
1- 25	$0.50	$1.70	$2.20
26- 50	.45	1.60	2.10
51-100	.40	1.50	2.00

BOOSTER PACKAGES DEDUCT PRICES OF QUEENS

Jensen's Apiaries
Macon, Miss.

"Home of 'Magnolia State' Strain Italians."

What's Your Other Hobby?

These fine magazines will give you the latest, inside information on their respective fields, and lead you to more profit and pleasure. All are monthies except last two named.

	Per Year
Poultry Item	$ .25
Leghorn World	.25
Plymouth Rock Monthly	.25
Rhode Island Red Journal	.25
American Turkey Journal	.50
Milking Shorthorn Journal	.50
American Pigeon Journal	1.00
American Rabbit Journal	1.00
Small Stock Magazine (rabbits, cavies, etc.)	1.00
Hog Breeder (all breeds)	1.00
Swine World (P. C.'s only)	1.00
Sheep Breeder (& Karakula)	1.00
The Sheepman Magazine	1.00
American Bee Journal	1.00
Beekeepers' Item	1.00
Gleanings in Bee Culture	1.00
Angora (Goat) Journal	1.00
Goat World (all breeds)	2.00
American Farm Youth (10 numbers)	.75
Belgian (Horse) Journal (quarterly)	1.00

Send coin, bill, money order, check or stamps.

MAGAZINE MART
Dept. GB **La Grange, Ill.**

XUM

Moore's Strain

LEATHER COLORED ITALIAN QUEENS— SUPERIOR STOCK

50c each

World-wide reputation for honey-gathering, hardiness, gentleness, etc., since 1879. Safe arrival and satisfaction guaranteed.

J. P. Moore

R. 3, Falmouth, Ky.
Former address, Morgan, Ky.

QUEENS

Carefully produced from Select Three-banded Italian Stock

35c each, any number.

Safe arrival and complete satisfaction guaranteed.

JOHN C. HOGG,
TIFTON, GEORGIA
P. O. Box 343

OLDEST BEEKEEPERS' ASSOCIATION LOOKS AHEAD

(Continued from page 384)

standard frame equipment, offering logical solutions for baffling problems. Mr. Roy Stadel, of Southington, conducted a class on spring inspection and keeping bees healthy. His suggestions were amplified by the venerable veteran A. W. Yates.

M. P. Dappe, representing the Department of Entomology of the Connecticut Experiment Station, announced that Roy Stadel of Southington, has been appointed to succeed Mr. Henry W. Coley, of Westport as Inspector. Mr. Coley has the distinction of retiring as the oldest bee inspector in the United States in point of continuous service. The campaign to suppress foulbrood was first agitated in the Connecticut Beekeepers' Association in 1904 by Stephen J. Griffin of Bridgeport, which resulted in one of the best enforced foulbrood laws in the country.

• • •

MELL ANSWERS ALLEN

Referring to Allen Latham's remarks, page 304, May, 1940, Gleanings, concerning my contention that bees do carry eggs from one hive to another, all I have to say is that I am glad that I haven't reached the point where I will not believe what I see with my own eyes.

Mell Pritchard, Medina, Ohio.

SOUTHERN MISSISSIPPI ITALIAN BEES

30c QUEENS 30c

Three-Banded—Reared on Natural Honey Flow—Good as the Best—Fast Service
2-lb. Pkg. with Queen .....$1.35 3-lb. Pkg. with Queen $1.70
State Inspected—Satisfaction Guaranteed
LUCEDALE APIARIES, LUCEDALE, MISS.

Northern Italian Queens

From Medina queen yard.

- Produced from select stock.
- Short confinement from our queen yard to your apiary.
- Prolific egg layers.
- Excellent honey gatherers.

Booking orders for June 15 delivery.

Root QUALITY **THE A. I. ROOT COMPANY, Medina, Ohio**

5 Hives as pictured complete with inner covers, frames, etc.
K.D. **$9.95**

Shipping wt. 160 lbs.

This is but one of the many bargains found in our large 1940 catalog. All items are first quality and guaranteed to please you. We also manufacture plain and wired comb foundation, extractors, tanks, etc.

Write for free catalog

The Walter T. Kelley Co., Paducah, Ky.

Manufacturers of Bee Supplies

Choice Italian Queens and Package Bees

Large Supply - Full Weight - Prompt Service

PRICES REDUCED TO

2-lb. Pkg. with Queen	$1.50	Each additional 1-lb. Bees	.40
3-lb. Pkg. with Queen	1.90	Queens, each	.40

Health Certificate Furnished
10% Discount—Dealers

HOLDER APIARIES, INC., Citronelle, Alabama

Address Us: Post Office Box 1101, Mobile, Alabama

QUEENS

3 for $1.00 postpaid

35c each

Queens mailed daily from Paducah—3-banded Italians only.

The Walter T. Kelley Co., Paducah, Ky.

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Garon's Three-Banded Progeny Test ITALIAN BEES and QUEENS

Use our Renowned Quality-Bred Progeny Test Bees to beat the lateness of this Spring.
Our prices place Record-Breaking Quality within reach of all.
(See our previous ads for details.)
2-lb. packages with queens $1.75
3-lb. packages with queens 2.25
Queens @ 35c each—For 100 or more, @ 30c each.

Garon Bee Company, Donaldsonville, La., USA.

Better Bred Queens

"Three-Banded Italians"

Can you afford to leave those old failing queens in your colonies when you can buy good queens at such low prices? We are prepared to make prompt shipment on short notice at the following prices:
Queens, 35c—3 for $1.00 2-lb. pkgs., $1.50 3-lb. pkgs., $2.00

CALVERT APIARIES, Calvert, Alabama

A Good Rule to Go By

Buy your Italian bees and queens from

ALABAMA APIARIES
Mt. Pleasant, Alabama

2-lb. package with queen $2.00
3-lb. package with queen 2.50
Queens, ... .65

QUEENS

Italians of Quality

50c; 12 or more 40c.

JOHN G. MILLER
723 C St., Corpus Christi, Texas

Brand Capping Melter

In Michigan, Running sold out his bee-keeping business to Schmidt in 1939, who continued on the Running locations. In September, Schmidt wrote, "At Filion we have the finest Water White honey we have ever produced", where a Brand Melter was in use. Schmidt ordered another Brand Melter for his home central plant, where not formerly used. Michigan's most extensive producers.

S. P. Hodgson & Sons
New Westminster, B. C. Canada

Manufactured by
A. G. Woodman Co.,
Grand Rapids, Mich.

Superior Honey Co.
Ogden, Utah

WHY BE DOWNHEARTED!

Do you feel blue and discouraged after the long, hard winter? Why be downhearted because so many colonies are weak, while crop and market prospects are so good?

A pound or two of our young **BOOSTER BEES** will make each colony shoot ahead like putting fertilizer around a growing plant.

Look at these attractive prices for shipments starting around the 24th of May. Shipping right on through June, or longer. Canadians may send Money Order payable at Georgetown, Ont.

BOOSTER BEES WITHOUT QUEENS

Quantity	Twos each	Threes each	Fours each	Fives each	If wanted Ex. Queens each
1-11	$1.40	$1.95	$2.50	$3.05	.50
12-23	1.30	1.80	2.30	2.80	.45
24-49	1.20	1.65	2.10	2.55	.40
50-up	1.10	1.50	1.90	2.30	.35

CASH WITH ORDER. SAFE ARRIVAL GUARANTEED.

MORLEY PETTIT, TIFTON, GEORGIA, U. S. A.

MY CARNIOLANS SATISFY BETTER

Jan Strgar strain. Gentler bees, whiter combs, more honey. Satisfaction guaranteed. Queens introduced free.

Combless package:	2-lb. bees, queen, $1.95;	3-lb. bees, queen, $2.45
M. Dadant Comb pkg.	2-lb. bees, queen, $2.50;	3-lb. bees, queen, $3.00
Standard Comb pkg.	2-lb. bees, queen, $2.00;	3-lb. bees, queen, $2.50

Extra queens, 50c, 10 or more, 45c each, postpaid.

EPHARDT'S HONEY FARMS, TORRAS, LOUISIANA.

Get Our 1940 Prices

24-Hour Service

Root QUALITY BEE SUPPLIES

HEADQUARTERS

For 3-Ply Foundation, Quality Hives, Triple-Locked Corner Frames, Sections, Veils, Smokers, etc.

See Your Root Dealer

A. I. ROOT CO. OF INDIANAPOLIS
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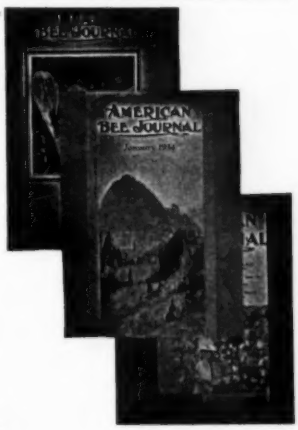
2 Years $1.50



American Bee Journal — monthly: published and edited by beekeepers for beekeepers. Full of pictures and tips on care of bees and selling of honey.

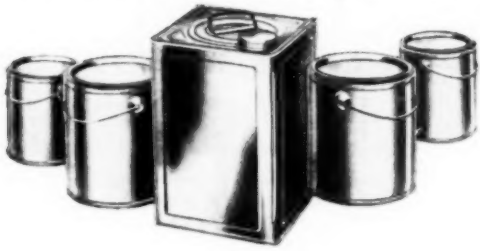
—SAMPLE COPY FREE.

$1.00 a year, 2 years $1.50 in U. S. and Canada. Combined with Gleanings in Bee Culture, both magazines, **ONE YEAR, $1.60.** This offer good only in the United States. Address—

American Bee Journal, Hamilton, Ill.

We're making a "Bee-line"

FOR OUR DISTRIBUTORS



Conveniently located, CONTINENTAL distributors carry a complete stock of honey cans and pails for immediate shipment. Consult this list for your nearest distributors when you need clean, bright, tight cans. They will be glad to serve you promptly.

Write, wire or telephone any of these Continental distributors for information on prices, sizes, terms or samples.

PHOENIX, ARIZ.
Quick Seed & Feed Co.
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F. E. Boyden-Hansen Co. Ltd.

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Los Angeles Honey Co.
Superior Honey Co.

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WATERTOWN, WISC.
G. B. Lewis Co.

POWELL, WYO.
A. D. Hardy

CONTINENTAL CAN COMPANY

4622 West North Avenue, Chicago, Ill.

WHEELING • JERSEY CITY • LOS ANGELES • ST. LOUIS • CINCINNATI

EXPERIENCES IN PRODUCING SECTION COMB HONEY

(Continued from page 360)

queen occupied combs in both brood chambers and rotated from one to the other. As the season advanced and the flow bgan to taper off, the queen was driven down into the lower brood chamber and the upper brood chamber became a food chamber, filled with honey and pollen, for winter stores. This solves the food problem.

Furthermore, it has been our experience that the double brood chamber furnishes ample comb space for the storage of pollen. In comb honey production this means that there is less likelihood of the bees carrying pollen up into the sections, than where the single brood chamber is used. Some perfectly fine comb honey is frequently spoiled because of a sprinkling of pollen. Double brood chambers help to eliminate pollen in comb honey sections.

Extra populous colonies are needed for comb honey. Double brood-chamber colonies are likely to be more populous than single brood-chamber colonies. If this is true, and I believe it is, even though I have no definite data to prove my theory, it stands to reason that double brood chamber colonies will store more surplus section comb honey than single brood-chamber colonies.

While the season of 1939 was not very favorable for comb honey in this locality we continued our experiments. This year we hope to carry on experiments and will doubtless have more experiences to record.

MERRILL BEE COMPANY
Italian Bees Queens

	Quantity	
With queens—1 to 50		50 to 5000
2-lb. pkgs.	$2.00	$1.75
3-lb. pkgs.	2.50	2.25

Untested queens, 50c each.

"Mississippi's Oldest Shippers"
Queen breeders for 30 years

Bucatunna, Miss.

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the
"Australasian Beekeeper"

Subscription 5 shillings per year. Start any time. Inquire for International Money Order for five shillings (Australian) at your Post Office.
Write now to The Editor, P. O. Box 20. West Maitland, New South Wales, Australia.

Judge by Results

A comparison with any other breed will PROVE to YOU the superiority of our own SPECIAL STRAIN of COLD RESISTING

GOLDEN BEES or Italians

Large, gentle, little inclined to swarm, and SUPER-PRODUCTIVE! Every queen is young, fertile, and personally reared.

SPECIAL PRICES

—No Discounts—

Queens: 1 to 5	$ .60
Queens: 5 and over	.50
2-lb. Pkg. with Queen	1.88
3-lb. Pkg. with Queen	2.43
Extra lb. of bees	.55

Spoerri Apiaries
St. Bernard P. O., Louisiana

RELIABLE SERVICE

Reliable Package Bees and Queens

Three-banded Italian Bees and Queens

I produce and sell a very high quality queen and package of bees. Bred for those who appreciate quality and production.

Price list via Express Collect.

2-lb. packages bees with select untested Queen

1 to 10 packages	$1.95 each
10 to 50 packages	1.85 each
50 to 100 packages	1.75 each
100 or more packages	1.65 each

3-lb. packages with select untested Queen

1 to 10 packages	$2.55 each
10 to 50 packages	2.45 each
50 to 100 packages	2.35 each
100 or more packages	2.15 each

For larger size packages add 50 cents per pound for each additional pound of bees wanted.

Select Untested Queens, 50 cents each; 50 to 100 queens, 45c each; 100 or more queens, 40c each. Select Tested Queens double the price of untested queens.

All prices quoted in U. S. Money.
Service and Quality guaranteed on everything I ship.

W. E. HARRELL
Hayneville, Alabama

XUM

THRIFTY BEES

Untested queens, 35c each; 100 for $30.00.
2-lb. combless packages with untested queen, each, $1.35; 12 or more, $1.25 each.
3-lb. combless packages with untested queen, each, $1.75; 12 or more, $1.65 each.

We Can Make Prompt Shipment

We guarantee full-weight packages, safe arrival and satisfaction.

Forty-eight years' experience assures you of the finest THRIFTY three-banded Italian stock.

W. J. Forehand & Sons
Fort Deposit, Alabama
Breeders Since 1892.

Knight's Package Bees and Queens

Leather-Colored Italians
The Best Honey Gatherers

2-lb. Packages including queen, ...$1.75
3-lb. Packages including queen, ... 2.25
4-lb. Packages including queen, ... 2.75
For queenless packages, deduct 50c.

Select young laying queens, guaranteed mated pure, 50c.
No charge for clipping.
Immediate Shipments.

Jasper Knight
Hayneville, Ala.

THAGARD'S

MASTER-BRED
Imported Italians

WE OFFER you the very best stock of Italians obtainable from Italy. OUR QUEENS are as pure as if they had come from Italy. Our breeders are imported direct from Italy and carefully selected and tested before used for breeding purposes.

WE OFFER YOU QUALITY QUEENS
Low Supersedure—Prompt Service
Gentle—Prolific—Any Quantity
Over-weight Packages
PANIC—PRICES

	1-24	25-99	100-up
2-lb. pkg. with Queen,	$1.35	$1.30	$1.25
3-lb. pkg. with queen,	1.75	1.70	1.65
Untested Queens,	.35	.30	.29

Write for prices on larger packages.

SERVICE—QUALITY—QUANTITY

The V. R. Thagard Co.
Greenville, Ala.

It's the Truth!

There never was a product made,
This truth you must confess,
But some D - - fool will make it worse
And sell his stuff for less.

Low Prices—High Quality

Type	Quantity 1-11	12-50	Above
Caged-Queen			
2-lb. Pkgs.	$2.35	$2.10	$2.00
3-lb. Pkgs.	2.85	2.60	2.50
Loose-Queen			
2-lb. Pkgs.	$2.60	$2.35	$2.20
3-lb. Pkgs.	3.30	3.00	2.80
Queenless			
2-lb. Pkgs.	$1.70	$1.50	$1.35
3-lb. Pkgs.	2.20	2.10	2.00

Additional pound bees, 50c.

Wire Us For Rush Orders.

You Can Get
What You Want
When You Want it
Like You Want it

THE PUETT COMPANY
HAHIRA, GA.

York's Package Bees and Queens

Quality Bred Italians More for Your Money

Untested queens, 1 to 9, 60c each; 10 to 49, 55c each and 50 up at 50c each. Tested Queens, double price of untested.

2-lb. pkgs. bees with queens, 1 to 9, $2.00 each; 10 to 49, $1.80 each and 50 up at $1.70 each.

3-lb. pkgs. bees with queens, 1 to 9, $2.65 each; 10 to 49, $2.45 each and 50 up at $2.25 each.

4-lb. pkgs. bees with queens, 1 to 9, $3.30 each; 10 to 49, $3.05 each and 50 up at $2.80 each.

For larger quantities, write for prices.

Book orders now for shipping dates wanted. Full weights, safe arrival and satisfaction guaranteed.

Special Summer prices after May 10th. Write us.

York Bee Company, Jesup, Georgia, U.S.A.

(The Universal Apiaries)

Steam Boilers

We specialize in Boilers suitable for beekeeper use. Delivered prices quoted to any part of the U. S. A.

Send for special circulars.

A. G. Woodman Co.
Grand Rapids, Michigan

FLASH

Due to the fact that we still have a large supply of bees and queens for shipment, we are offering them at SENSATIONALLY LOW PRICES

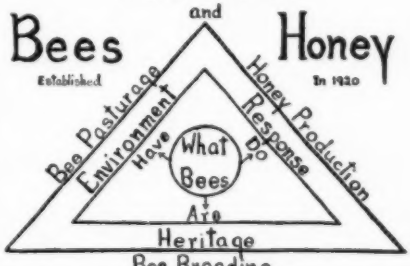
	1-24	25-99	100-up
2-lb. pkg. with queen,	$1.30	$1.25	$1.20
3-lb. pkg. with queen,	1.70	1.65	1.60
Untested queens,	.30	.28	.25

After June 15th deduct 2% off on package orders.

We are in position to make prompt shipment on any size order.

Greenville Bee Co., Greenville, Ala.

FRONTIER



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Since 1913

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serving America West of 100°
Featuring Triple Phases of **Bee Life**
Heritage—
Environment—
and **Response—**
with regular Departments devoted to each phase—
Bee Breeding—
Bee Pasturge—
Honey Production and Utilization
Published monthly. $1.00 the year
circulating "From Coast to Coast"
Sample Copy Free
RALPH BENTON, Editor
Rivera, California

XUM

Genuine Mountain Gray Caucasian Queens

for shipment June first to tenth, 50c each.

WE WILL HAVE NO QUEENS OR BEES FOR SHIPMENT AFTER JUNE 10th this season.

Caucasian Apiaries
Brooklyn, Ala.

Fresh from Our Yards

Italian Bees and Queens

Shipped within 24 hours after receipt of your order.

Queens		2-lb. pkg. and queen	3-lb. pkg. and queen
1	$ .50	$1.70	$2.20
6 or more	.45	1.55	2.05
12 or more	.40	1.45	1.95

For larger packages, 50c for each additional pound of bees. Queenless packages, deduct price of queen.

Citronelle Bee Co.
J. T. Haertel
Citronelle, Alabama

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